BRUHAT BENGALURU MAHANAGARA PALIKE

TENDER DOCUMENT – KW4

Name of Work: - Widening and Comprehensive Development of Abbigere Main Road from Renaissance woods-3 Appartment to Abbigere Park

Office of the Executive Engineer,
Road Infrastructure- Dasarahalli Division,
#207, Annex Building-3,
2nd Floor, N.R. Square,
Bengaluru – 560002

Bruhat Bangalore Mahanagara Palike

Office of the Executive Engineer, Road Infrastructure- Dasarahalli Division,
No 207, Annex Building-3, 2nd Floor, N.R. Square, Bengaluru - 560002.

TENDERS FOR THE WORK OF

Widening and Comprehensive Development of Abbigere Main Road from Renaissance woods-3 Appartment to Abbigere Park.

TENDER REFERENCE	:	EE/RI-Dhalli/TEND/02/2020-21
DOWNLOADING OF TENDER DOCUMENT	:	25-11-2020
LAST DATE AND TIME FOR SUBMISSION OF TENDERS	:	10-12-2020 17.30 hours
TIME AND DATE OF OPENING OF TECHNICAL BID OF TENDERS	:	11-12-2020 16.30 hours
PLACE OF OPENING OF TECHNICAL BID	:	Office of the Executive Engineer, Road Infrastructure- Dasarahalli Division, No 207, Annex Building-3, 2nd Floor, N.R. Square, Bengaluru - 560002
TIME AND DATE OF OPENING OF FINANCIAL BID	:	Will be intimated to the Qualified Tenderers
PLACE OF OPENING OF FINANCIAL BID	:	Will be intimated to the Qualified Tenderers
ADDRESS FOR COMMUNICATION	:	Office of the Executive Engineer, Road Infrastructure- Dasarahalli Division, No 207, Annex Building-3, 2nd Floor, N.R. Square, Bengaluru -
EMAIL ID	:	eerirrn@gmail.com

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SECTION 1: INVITATION FOR TENDERS (IFT)

BRUHAT BANGALURU MAHANAGARA PALIKE

No: EE/RI-RRN/TEND/02/2020-21

Office of the Executive Engineer
Road Infrastructure - Dasarahalli Division
No 207, Annex Building-3, 2ndFloor, N.R.
Square, Bengaluru - 560002
Dated : **21.11.2020**

INVITATION FOR TENDER (IFT)
(Through **GOK e–Procurement Portal** only)

1. The Executive Engineer, Road Infrastructure (Dasarahalli Division), invites tenders on behalf of the commissioner, BBMP, Bengaluru from eligible Contractors for the work detailed in the table below. The tenderers may submit tenders for works given in the table through e-procurement portal of the Government of Karnataka (viz https://eproc.karnataka.gov.in). The Tenderers are advised to note the minimum qualification criteria specified in Clause 3 of the Instructions to Tenderers to qualify for award of the contract as per standard bidding document uploaded in the e-procurement portal.

2. Tender documents can be downloaded from the e-procurement portal of the Government of Karnataka from **25.11.2020**

3. Tenders must be accompanied by **Earnest Money Deposit** specified for the work in the table below. Earnest Money Deposit will have to be in any one of the forms as specified in the Tender document (Minimum of Rs.1,00,000/- through e-payment under of the following i.e., online / RTGS / NEFT / OTC and the **balance by Bank guarantee** issued by Nationalized / Scheduled Bank and shall have to be valid for 90 days beyond the validity of the tender).

4. Tenders must be submitted online through e-procurement portal on or before **17.30 hours** on **10.12.2020** and the opening of tenders will be as per the e-procurement portal guidelines.

5. **GST Shall be paid to the tendered amount separately**.

6. Other details can be seen in the tender documents.

Sl. No.	Name of the Work	Amount put to tender (Rs. Lakhs)	EMD (Rs.lakhs)	Cost of Tender form	Period of Completion
1	Emergency Works In Arterial and Sub Arterial Roads in Dasarahalli zone For The Year 2020-21	26.77	0.54	As per E-Procurement Portal	90 Days
2	Resurfacing of Arterial and Sub Arterial Bad reaches at Peenya Industrial Area under Dasarahalli Assembly Constituency	263.03	3.95	As per E-Procurement Portal	90 Days
3	Resurfacing of Arterial and Sub Arterial at Jalahalli Under Dasarahalli Assembly Constituency	263.17	3.95	As per E-Procurement Portal	3 months
4	Resurfacing of Arterial and Sub Arterial at NTTF Factory Area Under Dasarahalli Assembly Constituency	176.34	2.65	As per E-Procurement Portal	3 months
6	Widening & Comprehensive Development of Abbigere Main Road from Renaissance Woods -3 Apartment to Abbigere Park	784.13	11.76	**As per E-Procurement Portal**	6 months

7	Widening & Comprehensive Development of Singapura Garden Road from Abbigere Main Road (Precision Components Factory) to Shrinikethan Layout (BDA Layout).	449.29	6.74	As per E-Procurement Portal	6 months

NOTE:

1. Pre bid meeting will be held on **07.12.2020** at **16.00 hours** in the office of the Chief Engineer Road Infrastructure, 4th Floor, Annex Building-3, BBMP Head Office, Bengaluru-02 to clarify the issue and to answer questions on any matter that may be raised at that stage as stated in "Instructions to Bidders" of the bidding document.
2. Technical Bids will be opened on the website https://eproc.karnataka.gov.in in the office of the Office of the Executive Engineer, Road Infrastructure- Dasarahalli Division, No 207, Annex Building-3, 4th Floor, N.R. Square, Bengaluru - 560002 on or after **11.12.2020** at **16.30 hours**.
3. Aspiring Bidders/Contractors who have not registered in e-procurement should register before participating through the website https://eproc.karnataka.gov.in
4. Before submission of online bids, bidders must ensure that scanned copies of all the necessary documents have been attached with bid.
5. The BBMP Bangalore reserves the right to accept/reject any are all tenders without assigning any reason.
6. All the required information required for Bids must be filled and submit online.
7. For details, registration and e-payment visit GOK e-Procurement website https://eproc.karnataka.gov.in or contact e-Procurement cell at (080-22371090, 080-22340060, 080-22340948).
8. This tender notice can also be seen on the BBMP website www.bbmp.gov.in

Executive Engineer
Road Infrastructure –Dasarahslli Division
Bruhath Bangalore Mahanagara Palike

Copy Submitted to:

1 Personnel Secretary to Worshipful Mayor to bring into the kind notice of the Worshipful Mayor.
2. Personnel Assistant to Hon□ble Deputy mayor to bring into the notice of Hon□ble Deputy Mayor.
3. Hon□ble Commissioner, BBMP for kind information.
4. Special Commissioner (Projects) BBMP for kind Information.
5. Engineer–in–Chief, BBMP for kind information.
6. Council Secretary to bring into notice of the Standing Committee (Major Works).
7. Chief Engineer (Road Infrastructure) / Environment/Markets/ South zone/ West Zone / East zone / Rajarajeshwari Nagar zone / Bommanahalli zone / Dasarahalli zone / Mahadevpura zone / Yelahanka zone / SWD for kind information.
8. Superintending Engineer (Road Infrastructure) South zone/ West zone/East zone/ Rajarajeshwari Nagar zone / Bommanahalli zone/ Dasarahalli zone/Mahadevpura zone/Yelahanka zone/ SWD for kind information.
9. I. T. Advisor with a Request to publish the same in the BBMP Website.
10. All Executive Engineers with a Request to publish the same in the Display / Notice Boards.
11. AO (RI) / Accounts Superintendent / Cashier for information for necessary action.
12. Public Relation Officer, BBMP for information and to publish the notification in leading National Newspapers in Kannada and English.
13. Notice board
14. Office Copy.

Executive Engineer
Road Infrastructure –Dasarahslli Division
Bruhat Bangalore Mahanagara Palike

SECTION 2: INSTRUCTIONS TO TENDERERS (ITT)

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A. General

1. Scope of Tender

1.1 **The Executive Engineer, Road Infrastructure- Dasarahalli Division, BBMP** (Referred to as Employer in these documents) invites tenders following Two Cover tender procedure, from eligible Tenderers, for the construction of works (as defined in these documents and referred to as "the works") detailed in the Table given in the Invitation for Tenders (IFT). The Tenderers may submit tenders for any or all of the works detailed in the table given in IFT.

2. Eligible Tenderers

2.1 Tenderers shall not be under a declaration of ineligibility for corrupt and fraudulent practices issued by the Government of Karnataka / BBMP

2.2 **Tenders from Joint ventures are not acceptable.**

3. Qualification of the Tenderer:

3.1 All Tenderers shall provide the requested information accurately and in sufficient detail in Section 3: Qualification information.

3.2 To qualify for award of this contract, each Tenderer in its name should have in the last five years (i.e. 2014-15 to 2019-20)

(a) achieved in at least two financial years a minimum financial turnover (in all classes of civil engineering construction works only) of **Rs. 16 Crores** *(usually not less than two times the estimated annual payments under this contract)*

(b) satisfactorily completed (at least 50% of the contract value), as prime contractor, at least one similar work such as Road work of value not less than **Rs.4.0 Crores** (usually not less than 50% estimated value of contract)*

(c) executed in any one year, the following minimum quantities of work:[1]

Sl. No	Description	Unit	Quantity
1	Earth work Excavation/ Embankment/Construction median/Filling available earth	Cum	**6139**
2	Construction of GSB/WMM	Cum	**3012**
3	BM/DBM/BC	Cum	**656**
4	Concrete Works of all grade	Cum	**593**
5	TMT Steel	MT	**34**

Note:- Certified contractor's certificates (paid vouchers) copies shall be uploaded (admitted bill copies or undertaken letter) For this bidder's work done certificate certified by the competent authority not below the rank of Executive Engineer should be uploaded.

(usually 80% of the peak annual rate of construction)

3.3 Each Tenderer should further demonstrate:

(a) Availability by owning at least 50% of the required / specified key and critical equipment for this work and the remaining 50% can be deployed on lease / hire basis for all works provided the relevant documents (commitment agreements etc.) for availability for this work are furnished.

Sl No	Description of equipment	Qty	Ownership
1	Hot Mix Plant 40/60 TPH	1 Nos	Own/Hire
2	Asphalt Mechanical Paver	1 Nos	Own / Hire
3	Motor Graders	1 Nos	Own / Hire
4	Vibratory Road Rollers with Capacity 8-10 Tonnes	1 Nos	Own/Hire
5	Truck Mounted with heating bitumen in boiler fitted with spray set	1 Nos	Own/Hire
6	Excavators (JCB/Hitachi)	3 Nos	Own- 2No / Hire-1No
7	Tractor Mounted with compressor for cleaning	1 Nos	own / Hire
8	Concrete Mixer with Hopper of 5 cum / hr. capacity	2Nos	Own- 1No / Hire-1No
9	Tippers	5 Nos	Own- 3No / Hire-2No
10	Tractor with Water Tankers	3 Nos	Own- 2No / Hire-1No
11	Tractor Trailer	2 Nos	Own- 1No / Hire-1No
12	Transit Mixer / Ajax Mixer	3Nos	Own- 2No / Hire-1No

(b) liquid assets and /or availability of credit facilities of not less than **Rs. 196.00 Lakhs** (Credit lines / letter of credit/ certificates from banks for meeting the fund requirement etc.) *(usually the equivalent of the estimated cash flow for three months in the peak construction period)**

3.4 To qualify for a package of contracts made up of this and other contracts for which tenders are invited in this IFT, the Tenderer must demonstrate having experience and resources to meet the aggregate of the qualifying criteria for the individual contracts.

---

[2] This is for building works. Appropriately change for other works.
[3] This is for building works. Appropriately change for other works.

3.5 Sub-contractors' experience and resources shall not be taken into account in determining the Tenderer's compliance with the qualifying criteria except to the extent stated in 3.2 (d) and (e) above.

3.6 Tenderers who meet the above specified minimum qualifying criteria, will only be qualified, if their available tender capacity is more than the total tender value. The available tender capacity will be calculated as under:

Assessed available tender capacity = (A*N*1.5 - B)

where

A = Maximum value of civil engineering works executed in any one year during the last five years *(updated to* **2019-2020** *price level)* taking into account the completed as well as works in progress.

N = Number of years prescribed for completion of the works for which tenders are invited.

B = Value, at **2019-2020** [4]price level, of existing commitments and on-going works to be completed during the next.....years *(period of completion of the works for which Tenders are invited)**

Note: *The statements showing the value of existing commitments and on-going works as well as the stipulated period of completion remaining for each of the works listed should be countersigned by the Employer in charge, not below the rank of an Executive Engineer or equivalent.*

3.7 Even though the Tenderers meet the above criteria, they are subject to be disqualified if they have:

- made misleading or false representations in the forms, statements and attachments submitted in proof of the qualification requirements; and/or
- record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures etc.; and/or
- participated in the previous Tender for the same work and had quoted unreasonably high tender prices and could not furnish rational justification.

4. One Tender per Tenderer:

4.1 Each tenderer shall submit only one tender for one package. A tenderer who submits or participates in more than one Tender (other than as a sub-contractor or in cases of alternatives that have been permitted or requested) will cause all the proposals with the Tenderer's participation to be disqualified.

5. Cost of Tendering:

5.1 The tenderer shall bear all costs associated with the preparation and submission of his tender, and the Employer will in no case be responsible and liable for those costs.

6. Site visit:

6.1 The tenderer at his own responsibility and risk is encouraged to visit and examine the Site of Works and its surroundings and obtain all information that may be necessary for preparing the Tender and entering into a contract for construction of the Works. The cost of visiting the Site shall be at the Tenderer's own expense.

B. Tender documents

7. Content of Tender documents

7.1 The set of tender documents shall have all the Sections given in Page 2:
7.2 Both the sets should be completed and returned with the tender.

8. Clarification of Tender Documents

8.1 A prospective tenderer requiring any clarification of the tender documents may notify the Employer in writing or by email at the Employer's address indicated in the invitation to tender. Additionally all the clarifications may be put up during the pre-tender meeting.

8.2 **Pre-tender meeting:**

8.2.1 The tenderer or his authorized representative is invited to attend a pre-tender meeting which will take place at **The Office of the Chief Engineer (Road Infrastructure), Annex Building-3, 4th Floor, BBMP Head Office, N.R.Square, Bangalore-02** on **07.10.2020 at 16.00 hours.**

8.2.2 The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage

8.2.3 The tenderer is requested to submit any questions in writing or by cable/email to reach the Employer not later than one week before the meeting.

8.2.4 Minutes of the meeting, including the text of the questions raised (without identifying the source of enquiry) and the responses given will be transmitted without delay to all purchasers of the tender documents. Any modification of the tender documents listed in Sub-Clause 7.1 which may become necessary as a result of the pre-tender meeting shall be made by the Employer exclusively through the issue of an Addendum pursuant to Clause 9 and not through the minutes of the pre-tender meeting.

8.2.5 Non-attendance at the pre-tender meeting will not be a cause for disqualification of a tenderer.

9. Amendment of Tender documents

9.1 Before the deadline for submission of tenders, the Employer may modify the tender documents by issuing addenda.

9.2 Any addendum thus issued shall be part of the tender documents and shall be published in the e-procurement portal only.

9.3 To give prospective Tenderers reasonable time in which to take an addendum into account in preparing their tenders, the Employer shall extend as necessary the deadline for submission of tenders, in accordance with Sub-Clause 16.2 below.

C. Preparation of Tenders

10. Documents comprising the Tender

10.1 The tender submitted by the Tenderer shall be in two covers and shall contain the documents as follows:

10.1.1 Technical Bid:

(a) Earnest Money Deposit;
(b) Qualification Information as per formats given in Section 3;

10.1.2 **Financial Bid:**

(a) The Tender (in the format indicated in Section 4)

(b) Priced Bill of Quantities (Section 9);

and any other materials required to be completed and submitted by Tenderers in accordance with these instructions. The documents listed under Sections 3, 4, 6 and 9 shall be filled in without exception.

10.2 Deleted.

11. Tender prices

11.1 The contract shall be for the whole works as described in Sub-Clause 1.1, based on the priced Bill of Quantities submitted by the Tenderer.

11.2 The Tenderer shall fill in rates and prices and line item total (both in figures and words) for all items of the Works described in the Bill of Quantities along with total tender price (both in figures and words). **Items for which no rate or price is entered by the Tenderer will not be paid for by the Employer when executed and shall be deemed covered by the other rates and prices in the Bill of Quantities**. Corrections, if any, shall be made by crossing out, initialing, dating and rewriting.

11.3 All duties, taxes except GST as per the clause 39.1 of GCC, and other levies payable by the contractor under the contract, or for any other cause, shall be included in the rates, prices and total Tender Price submitted by the Tenderer.

11.4 The rates and prices quoted by the Tenderer shall be subject to adjustment during the performance of the Contract in accordance with the provisions of Clause of the Conditions of Contract

12. Tender validity

12.1 Tenders shall remain valid for a period not less than 180 days after the deadline date for tender submission specified in Clause 16. A tender valid for a shorter period shall be rejected by the Employer as non-responsive.

12.2 In exceptional circumstances, prior to expiry of the original time limit, the Employer may request that the Tenderers may extend the period of validity for a specified additional period. The request and the Tenderers' responses shall be made in writing or by cable. A Tenderer may refuse the request without forfeiting his earnest money deposit. A Tenderer agreeing to the request will not be required or permitted to modify his tender, but will be required to extend the validity of his earnest money deposit for a period of the extension, and in compliance with Clause 13 in all respects.

13. Earnest money deposit

13.1 The Tenderer shall furnish, as part of his tender, earnest money deposit (EMD) at the following rates

a) upto Rs.20 Lakhs - 2.5%

b) Rs. 20 Lakhs and above upto Rs. 1 crore – 2% subject to a minimum of Rs. 50,000/-

c) Rs. 1 crore and above upto Rs. 10 crores – 1.5% subject to a minimum of Rs. 2,00,000/-

d) Rs. 10 crores and above – 1% subject to a minimum of Rs.15,00,000/-. This earnest money deposit of Rs. 1.00 Lakh shall be paid in the e-procurement portal using Credit Card / Debit Card / NEFT /OTC and balance amount can be submitted in the form of Banker's cheque / Demand draft / Pay Order / Bank Guarantee in favour of The Executive Engineer RI-Dasarahalli Division, BBMP payable at Bangalore or Cash or specified Small Savings Instruments [5]pledged to The Executive Engineer, RI - Dasarahalli Division, BBMP

e) Fixed Deposit Receipt (FDR) subject to the following condition

- Maturity date of FDRs issued by the Bank should be beyond the date expected date of finalization of the tender.

[5] Refer Clause 12(1) Chapter IV of KTPP Rules 2000

13.2 Instruments having fixed validity issued as earnest money deposit for the tender shall be valid for 45 days **beyond** the validity of the tender.

13.3 Any tender not accompanied by an acceptable earnest money deposit and not secured as indicated in Sub-Clauses 13.1 and 13.2 above shall be rejected by the Employer as non-responsive.

13.4 The earnest money deposit of unsuccessful Tenderers will be returned within 30 days of the end of the tender validity period specified in Sub-Clause 12.1.

13.5 The earnest money deposit of the successful Tenderer will be discharged when the Tenderer has signed the Agreement and furnished the required Performance Security.

13.6 The earnest money deposit may be forfeited:

(a) if the Tenderer withdraws the Tender after tender opening during the period of tender validity;

(b) if the Tenderer does not accept the correction of the Tender Price, pursuant to Clause 24; or

(c) in the case of a successful Tenderer, if the Tenderer fails within the specified time limit to

(i) sign the Agreement; or

(ii) furnish the required Security deposit and additional security deposit for unbalanced tenders.

14. Format and signing of Tender

14.1 Deleted.

14.2 Deleted.

14.3 The Tender shall contain no alterations or additions, except those to comply with instructions issued by the Employer, or as necessary to correct errors made by the Tenderer, in which case such corrections shall be initialed by the person signing the Tender.

D. Submission of Tenders

15. Sealing and marking of tenders

15.1 The Tenderer shall acess tender documents, fill them and submit the completed tender document through e-procurement portal only (http://eproc.karnataka.gov.in). the scanned copy of the required qualification information documents as in Clause 3, EMD and Tender processing fee in the form of e-payment as in Clause 13.1, Form of tender in prescribed form and priced Bill of Quantities shall be attached to the e-tender document, failing which the bid will not be considered.
It is the responsibility of the tenderer to submit all the documents pertaining to Eligibility criteria / Qualification information with due diligence.

15.2 Deleted.

15.3 Deleted.

15.4 Deleted.

15.5 No hard copy of any document will be considered at tender stage.

16. Deadline for submission of the Tenders

16.1 Tenders must be received by the Employer not later than the time and date as in e-procurement portal.

16.2 The Employer may extend the deadline for submission of tenders by issuing an amendment in accordance with Clause 9, in which case all rights and obligations of the Employer and the Tenderers previously subject to the original deadline will then be subject to the new deadline.

17. Late Tenders

17.1 Any Tenderer trying to submit the tender after the deadline will not be accepted.

18. Modification and Withdrawal of Tenders

18.1 Tenderers may modify contents of tender before the deadline prescribed in Clause 16.

18.2 Tenderers may withdraw their Tenders by cancelling their bid on the portal only before the deadline prescribed in Clause 16.

18.3 No Tender may be modified and withdrawn after the deadline for submission of Tenders.

18.4 Withdrawal or modification of a Tender between the deadline for submission of Tenders and the expiration of the original period of Tender validity specified in Clause 12.1 above or as extended pursuant to Clause 12.2 may result in the forfeiture of the earnest money deposit pursuant to Clause 13.

1 8.5 Tenderers may only offer discounts to, or otherwise modify the prices of their Tenders by submitting Tender modifications in accordance with this clause, or included in the original Tender submission.

E. Tender opening and evaluation

19. Opening of Technical Bid of all Tenders and evaluation to determine qualified Tenderers:

19.1 The Employer will open the Technical bid of all the Tenders at the time and date as in e-procurement portal, at the **Office of the Executive Engineer, Road Infrastructure - Dasarahalli Division, No 207, Annex Building-3, 2nd Floor, N.R. Square, Bengaluru - 560002** in the presence of the Tenderers or their representatives who choose to attend at **16.30 hours** on the date and the place specified in Clause 16. In the event of the specified date of Tender opening being declared a holiday for the Employer, the Tenders will be opened at the appointed time and location on the next working day.

19.2 Deleted.

19.3 Deleted.

19.4 Deleted

19.5 Deleted.

19.6 The Employer will evaluate and determine whether each tender (a) meets the eligibility criteria defined in ITT Clause 2; (b) is accompanied by the required earnest money deposit as per stipulations in ITT Clause and (c) meets the minimum qualification criteria stipulated in ITT Clause 3. The Employer will draw out a list of qualified Tenderers.

20. Opening of Financial Bid of qualified Tenderers and evaluation:

20.1 The Employer will inform all the Qualified Tenderers the time, date and venue fixed for the opening of the Finacial Bid in E proc Portal. The Employer will open the Financial bid of Qualified Tenderers at the appointed time and date in the presence of the Tenders or their representatives who choose to attend. In the event of the specified date of Second Cover opening being declared a holiday for the Employer, the Financial bid will be opened at the appointed time and location on the next working day.

20.2 Deleted.

20.3 Deleted.

20.4 Deleted.

21. Process to be confidential

21.1 Information relating to the examination, clarification, evaluation, and comparison of Tenders and recommendations for the award of a contract shall not be disclosed to Tenderers or any other persons not officially concerned with such process until the award to the successful Tenderer has been announced. Any effort by a Tenderer to influence the Employer's processing of Tenders or award decisions may result in the rejection of his Tender.

22 Clarification of Tenders

22.1 To assist in the examination, evaluation, and comparison of Tenders, the Employer may, at his discretion, ask any Tenderer for clarification of his Tender, including breakdowns of unit rates. The request for clarification and the response shall be in writing or by cable, but no change in the price or substance of the Tender shall be sought, offered, or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Tenders in accordance with Clause 24.

22.2 Subject to sub-clause 22.1, no Tenderer shall contact the Employer on any matter relating to its Tender from the time of the Tender opening to the time the contract is awarded. If the Tenderer wishes to bring additional information to the notice of the Employer, it should do so in writing.

22.3 Any effort by the Tenderer to influence the Employer in the Employer's Tender evaluation, Tender comparison or contract award decisions may result in the rejection of the Tenderers' Tender.

23. Examination of Tenders and determination of responsiveness

23.1 Prior to the detailed evaluation of Tenders, the Employer will determine whether each Tender; (a) has been properly signed; and; (b) is substantially responsive to the requirements of the Tender documents.

23.2 A substantially responsive Tender is one which conforms to all the terms, conditions, and specifications of the Tender documents, without material deviation or reservation. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality, or performance of the Works; (b) which limits in any substantial way, inconsistent with the Tender documents, the Employer's rights or the Tenderer's obligations under the Contract; or (c) whose rectification would affect unfairly the competitive position of other Tenderers presenting substantially responsive Tenders.

23.3 If a Tender is not substantially responsive, it will be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the nonconforming deviation or reservation.

24. Correction of errors

24.1 Tenders determined to be substantially responsive will be checked by the Employer for any arithmetic errors. Errors will be corrected by the Employer as follows:

(a) where there is a discrepancy between the rates in figures and in words, the lower of the two will govern[6]; and

(b) where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern.

[6] Clause 25(2) of Chapter VI of KTPP Rules 2000 states that " in case of discrepancy between the price quoted in words and figures, the lower of the two shall be considered".

24.2 The amount stated in the Tender will be adjusted by the Employer in accordance with the above procedure for the correction of errors and, with the concurrence of the Tenderer, shall be considered as binding upon the Tenderer. If the Tenderer does not accept the corrected amount the Tender will be rejected, and the earnest money deposit may be forfeited in accordance with Sub-Clause 13.6 (b).

25. Evaluation and comparison of Tenders

25.1 The Employer will evaluate and compare only the Tenders determined to be substantially responsive in accordance with Clause 23.

25.2 In evaluating the Tenders, the Employer will determine for each Tender the evaluated Tender Price by adjusting the Tender Price as follows:

(a) making any correction for errors pursuant to Clause 24; and

(b) making appropriate adjustments to reflect discounts or other price modifications offered in accordance with Sub Clause 18.5.

25.3 The Employer reserves the right to accept or reject any variation, deviation, or alternative offer. Variations, deviations, and alternative offers and other factors which are in excess of the requirements of the Tender documents or otherwise result in unsolicited benefits for the Employer shall not be taken into account in Tender evaluation.

25.4 The estimated effect of the price adjustment conditions under Clause 41 of the Conditions of Contract, during the implementation of the Contract, will not be taken into account in tender Evaluation

25.5 If the tender of the successful tenderer is seriously unbalanced in relation to the Employer's estimate of the cost of the work to be performed under the contract, the Employer may require the Tenderer to produce detailed price analyses for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analyses, the Employer may require that the amount of the performance security set forth in Clause 29 be increased at the expense of the successful Tenderer to a level sufficient to protect the Employer against financial loss in the event of default of the successful tenderer under the contract.

F. Award of Contract

26. Award criteria

26.1 Subject to Clause 27, the Employer will award the Contract to the Tenderer whose Tender has been determined to be substantially responsive to the Tender documents and who has offered the lowest evaluated Tender Price, provided that such Tenderer has been determined to be (a) eligible in accordance with the provisions of Clause 2, and (b) qualified in accordance with the provisions of Clause 3.

27. Employer's right to accept any Tender and to reject any or all Tenders

27.1 Notwithstanding Clause 26, the Employer reserves the right to accept or reject any Tender, and to cancel the Tender process and reject all Tenders, at any time prior to the award of Contract, without thereby incurring any liability to the affected Tenderer or Tenderers or any obligation to inform the affected Tenderer or Tenderers of the grounds for the Employer's action.

28. Notification of award and signing of Agreement

28.1 The Tenderer whose Tender has been accepted will be notified of the award by the Employer prior to expiration of the Tender validity period by cable, telex, e-mail or facsimile confirmed by registered letter. This letter (hereinafter and in the *Conditions of Contract* called the "Letter of Acceptance") will state the sum that the Employer will pay the Contractor in consideration of the execution, completion, and maintenance of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Contract called the "Contract Price").

28.2 The notification of award will constitute the formation of the Contract, subject only to the furnishing of Security deposit in accordance with the provisions of Clause 29.

28.3 The Agreement will incorporate all agreements between the Employer and the successful Tenderer. It will be kept ready for signature of the successful Tenderer in the office of Employer within 30 days following the notification of award along with the Letter of Acceptance. Within 20 days of receipt, the successful Tenderer will sign the Agreement and deliver it to the Employer.

28.4 Upon the furnishing by the successful Tenderer of the Performance Security, the Employer will promptly notify the other Tenderers that their Tenders have been unsuccessful.

29. Security deposit

29.1 Within 20 days of receipt of the Letter of Acceptance, the successful Tenderer shall deliver to the Employer a Security deposit in any of the forms given below for an amount equivalent to 5% of the Contract price plus additional security for unbalanced tenders in accordance with Clause 25.5 of ITT and Clause 44 of the Conditions of Contract for all works. :

- Cash or
- Banker's cheque / Demand draft, / Pay Order in favour of The Executive Engineer RI-Rajarajeshwari Nagar Division payable at Bengaluru or
- A bank guarantee in the form given in Section 10; or
- Specified Small Savings Instruments pledged to Commissioner / Executive Engineer, BBMP;

29.2 If the security deposit is provided by the successful Tenderer in the form of a Bank Guarantee, it shall be issued either by a Nationalized/Scheduled bank.

29.3 The security deposit if furnished in cash or demand draft can, if requested, be converted to interest bearing securities at the cost of the contractor.

29.4 Failure of the successful Tenderer to comply with the requirements of Sub-Clause 29.1 shall constitute sufficient grounds for cancellation of the award and forfeiture of the Earnest money deposit.

30 Advance Payment and Security:

30.1 The Employer will provide an advance payment on the contract price as stipulated in the Conditions of Contract, subject to the maximum amount as stated in the Contract Data.

31. Corrupt or Fraudulent practices

31.1 The BBMP requires that the Tenderers/Suppliers/Contractors, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, BBMP :

(a) will reject a proposal for award if it determines that the Tenderer recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;

(b) will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a BBMP contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a BBMP contract.

31.2 Furthermore, Tenderers shall be aware of the provision stated in sub-clause 50.2 of the Conditions of Contract.

SECTION 3: QUALIFICATION INFORMATION

The information to be filled in by the Tenderer hereunder will be used for purposes of computing Tender capacity as provided for in Clause 3 of the Instructions to Tenderers. This information will not be incorporated in the Contract.

1.1 Constitution or legal status of Tenderer [Attach copy]

Place of Registration _____

Principal place of business: (Attach Copy) _____

1.2 Total value of civil engineering construction works executed and payments received in the last five years (in Rs. Lakhs) Attach Certificate from Chartered Accountant

2015 - 16 .....
2016 - 17 .....
2017 - 18 .....
2018 - 19 .....
2019 - 20 .....

1.3 Work performed as Prime Contractor (in the same name) on works of similar nature over during the five years specified in 1.2 above.

Project Name	Name of Employer	Description of Work	Contract Number	Value of Contract Rs. Lakhs	Date of issue of work order	Specified period of completion	Actual date of completion	Remarks explaining reasons for delay in completion of work
1	2	3	4	5	6	7	8	9

1.4 Quantities of work executed as prime contractor (in the same name) during the last five years specified in 1.2 above:

Year	Name of Work	Name of Employer	Quantity of work performed (cum)[7]			Remarks (Indicate contract reference)
			Cement Concrete	Masonry	Earthworks	
2015-16						
2016-17						
2017-18						
2018-19						
2019-20						

1.4 Information on works for which Tenders have been submitted and works which are yet to be completed as on the date of this Tender.

[7] Items of work for which data is requested should tally with that specified in ITT Clause 3

(A) Existing commitments and on-going works:

Description of Work	Place & State	Contract No. & Date	Name And Address of Employer	Value of Contract (Rs. lakhs)	Stipulated period of completion	Value of works remaining to be completed (Rs. lakhs) Attach Certificates from Engineers – in- Charge	Anticipated date of completion
1	2	3	4	5	6	7	8

(B) Works for which Tenders already submitted:

Description of Work	Place & State	Name and Address of Employer	Estimated value of works (Rs. lakhs)	Stipulated period of completion	Date when decision is expected	Remarks if any
1	2	3	4	5	6	7

1.6. The following items of equipment are considered essential for successfully carrying out the works. The Tenderer should furnish all the information listed below.

Item of Equipment	Requirement[8]		Owned	Owned and available		
	No.	Capacity		Number/ Capacity	Age/ condition	Remarks

1.7 Reports on the financial standing of the tenderer, such as profit and loss statements and auditor's reports for the last five years;

1.8 Qualification and experience of the key technical and management personnel in permanent employment with the tenderer and those that are proposed to be deployed on this contract, if awarded.

1.9. Name, address, and telephone, telex, and fax numbers of the Tenderers' bankers who may provide references if contacted by the Employer.

1.10 Evidence of access to financial resources to meet the qualification requirement specified in ITT Clause3.3 (b): Cash in hand, Letter of Credit etc. List them below and attach certificate from the Banker in the suggested format as under:

[8] The item of equipment, required number and capacity should match with those specified in ITT Clause 3.3 (a)

BANKER'S CERTIFICATE

This is to certify that M/s. ..... is a reputed company with a good financial standing. If the contract for this work, namely ..... *(name of the work)* is awarded to the above firm, we shall be able to provide overdraft/credit facilities to the extent of Rs. ..... to meet the working capital requirements for executing the above contract

Name of the Bank, Senior Bank Manger with Signature

Address:.....

.....

.....

1.11 Proposals for subcontracting components of works amounting to more than 20% of the contract price

Item of Work	Value of Sub-Contract	Identified Sub-Contractor (Name and address)	Experience of similar work (Attach certificates from the respective Employers.)
1	2	3	4

1.12 Information on litigations in which the Tenderer is involved:

Other Party (ies)	Employer	Details of dispute	Amount involved	Remarks showing present status

1.13 The proposed methodology and program of construction, backed with equipment planning and deployment, duly supported with broad calculations and quality control procedures proposed to be adopted, justifying their capability of execution and completion of the work as per technical specifications within the stipulated period of completion as per milestones.

SECTION 4: FORMS OF TENDER, LETTER OF ACEPTANCE, NOTICE TO PROCEED WITH THE WORK AND AGREEMENT FORM

Form of Tender

Description of the Works: .....
.....
.....
(To be filled in by the Employer before issue of the Tender document)

Tender

To..... .....

Address .....
.....
(To be filled in by the Employer before issue of the Tender document)

GENTLEMEN,

We offer to execute the Works described above in accordance with the Conditions of Contract accompanying this Tender for the Contract Price of Rs. ..... *[in figures]* (.....) *[in letters]*.[9]

This Tender and your written acceptance of it shall constitute a binding contract between us. We understand that you are not bound to accept the lowest or any Tender you receive.

The advance payment required is Rs.....

We undertake that, in competing for (and, if the award is made to us, in executing) the above contract, we will strictly observe the laws against fraud and corruption in force in India namely -Prevention of Corruption Act 1988.

We hereby confirm that this Tender complies with the Tender validity and Earnest money deposit required by the Tender documents.

We attach herewith our current income-tax clearance certificate.

Yours faithfully,

Authorized Signature:

Name & Title of Signatory:

Name of Tenderer _____
Address: _____
_____

[9] To be filled in by the Tenderer, together with his particulars and date of submission at the bottom of the Form of Tender

Letter of Acceptance

(letterhead paper of the Employer)

.....[date]

To:

.....

.....[name and address of the Contractor]

Dear Sirs,

This is to notify you that your Tender dated ..... for execution of the .... *[name of the contract and identification number, as given in the Instructions to Tenderers]* for the Contract Price of Rupees .... (.....) [amount in words and figures], as corrected and modified in accordance with the Instructions to Tenderers is hereby accepted by our Agency.

You are hereby requested to furnish Security deposit plus additional security for unbalanced tenders in terms of Clause 25.5 of ITT, in the form detailed in Clause 29.1 of ITT for an amount of Rs..... within 20 days of the receipt of this letter of acceptance valid up to 30 days from the date of expiry of Defects Liability Period i.e. up to ..... and sign the contract, failing which action as stated in Para 29.4 of ITT will be taken.

Yours faithfully,

Authorized Signature

Name and Title of Signatory

Name of Agency

Issue of Notice to proceed with the work

(letterhead of the Employer)

.....(date)

To

.....

.....

..... (name and address of the Contractor)

Dear Sirs:

Pursuant to your furnishing the requisite security deposit as stipulated in ITT Clause 29.1 and signing of the contract agreement for the construction of ..... (name of the work) a Tender Price of Rs..... , you are hereby instructed to proceed with the execution of the said works in accordance with the contract documents.

Yours faithfully,

(Signature, name and title of signatory authorized to sign on behalf of Employer)

Agreement Form

Agreement

This agreement, made the .....day of .....20....., between.....
.....[name and address of Employer] (hereinafter called -the Employer□) of the one part and .....
..... [name and address of contractor] (hereinafter called -the Contractor□) of the other part.

Whereas the Employer is desirous that the Contractor execute .....
.....
.....[name and identification number of Contract] (hereinafter called -the Works□) and the Employer has accepted the Tender by the Contractor for the execution and completion of such Works and the remedying of any defects therein at a contract price of Rupees.....

NOW THIS AGREEMENT WITNESSETH as follows:

1. In this Agreement, words and expression shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to, and they shall be deemed to form and be read and construed as part of this Agreement.
2. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy any defects therein in conformity in all aspects with the provisions of the Contract.
3. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying the defects wherein the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.
4. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz:
   - i) Letter of Acceptance;
   - ii) Notice to proceed with the works;
   - iii) Contractor's Tender;
   - iv) Contract Data;
   - v) Conditions of contract (including Special Conditions of Contract);
   - vi) Specifications;
   - vii) Drawings;
   - viii) Bill of Quantities; and
   - ix) Any other document listed in the Contract Data as forming part of the contract.

In witness whereof the parties thereto have caused this Agreement to be executed the day and year first before written.

The Common Seal of.....
.....
was hereunto affixed in the presence of:
Signed, Sealed and Delivered by the said
.....
.....
in the presence of:
Binding Signature of Employer.....

Binding Signature of Contractor.....

SECTION 5: CONDITIONS OF CONTRACT

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Conditions of Contract

A. General

1. Definitions

1.1 Terms which are defined in the Contract Data are not also defined in the Conditions of Contract but keep their defined meanings. Bold letters are used to identify defined terms.

Bill of Quantities means the priced and completed Bill of Quantities forming part of the Tender.
Compensation events are those defined in Clause 38 hereunder.
The **Completion Date** is the date of completion of the Works as certified by the Employer in accordance with Sub Clause 46.1.
The **Contract** is the contract between the Employer and the Contractor to execute, complete and maintain the Works. It consists of the documents listed in Clause 2.2 below.
The **Contract Data** defines the documents and other information which comprise the Contract.
The **Contractor** is a person or corporate body whose Tender to carry out the Works has been accepted by the Employer.
The **Contractor's Tender** is the completed Tender document submitted by the Contractor to the Employer.
The **Contract price** is the price stated in the Letter of Acceptance and thereafter as adjusted in accordance with the provisions of the Contract.
Days are calendar days; **months** are calendar months.
A **Defect** is any part of the Works not completed in accordance with the Contract.
The **Defects liability period** is the period named in the Contract Data and calculated from the Completion Date.
The **Employer** is the party who will employ the Contractor to carry out the Works.
Equipment is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works.
The **Initial Contract price** is the Contract Price listed in the Employer's Letter of Acceptance.
The **Intended Completion Date** is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date is specified in the Contract Data. The Intended Completion Date may be revised only by the Employer by issuing an extension of time.
Materials are all supplies, including consumables, used by the contractor for incorporation in the Works.
Plant is any integral part of the Works which is to have a mechanical, electrical, electronic or chemical or biological function.
The **Site** is the area defined as such in the Contract Data.
Specification means the Specification of the Works included in the Contract and any modification or addition made or approved by the Employer.
The **Start Date** is given in the Contract Data. It is the date when the Contractor shall commence execution of the works. It does not necessarily coincide with any of the Site Possession Dates.
A **Subcontractor** is a person or corporate body who has a Contract with the Contractor to carry out a part of the work in the Contract which includes work on the Site.
A **Variation** is an instruction given by the Employer which varies the Works.
The **Works** are what the Contract requires the Contractor to construct, install, and turn over to the Employer, as defined in the Contract Data.

2. Interpretation

2.1 In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Employer will provide instructions clarifying queries about the Conditions of Contract.

2.2 The documents forming the Contract shall be interpreted in the following order of priority:

(1) Agreement
(2) Letter of Acceptance, notice to proceed with the works
(3) Contractor's Tender
(4) Contract Data
(5) Conditions of Contract
(6) Specifications
(7) Drawings
(8) Bill of quantities and
(9) Any other document listed in the Contract Data as forming part of the Contract.

3. Law governing contract

3.1 The law governing the Contract is the Laws of India supplanted by the Karnataka Local Acts.

4. Employer's decisions

4.1 Except where otherwise specifically stated, the Employer will decide contractual matters between the Employer and the Contractor.

5. Delegation

5.1 The Employer may delegate any of his duties and responsibilities to other people after notifying the Contractor and may cancel any delegation after notifying the Contractor.

6. Communications

6.1 Communications between parties which are referred to in the conditions are effective only when in writing. A notice shall be effective only when it is delivered (in terms of Indian Contract Act).

7. Subcontracting (Deleted)

7.1 Deleted.

8. Other Contractors

8.1 The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities, and the Employer.

9. Personnel

9.1 The Contractor shall employ the technical personnel (of number and qualifications) as may be stipulated by GOK from time to time during the execution of the work. The technical staff so employed shall be available at site as may be stipulated by the Employer.

9.2 If the Employer asks the Contractor to remove a person who is a member of the Contractor's staff or his work force stating the reasons, the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the work in the Contract.

10. Employer's and Contractor's risks

10.1 The Employer carries the risks which this Contract states are Employer's risks, and the Contractor carries the risks which this Contract states are Contractor's risks.

11. Employer's risks

11.1 The Employer is responsible for the excepted risks which are:

(a) rebellion, riot commotion or disorder unless solely restricted to employees of the Contractor or his Sub-Contractors arising from the conduct of the Works; or

(b) a cause due solely to the design of the Works, other than the Contractor's design; or

(c) any operation of the forces of nature (in so far as it occurs on the Site) which an experienced contractor:

(i) could not have reasonably foreseen; or

(ii) could reasonably have foreseen, but against which he could not reasonably have taken at least one of the following measures;

(A) prevent loss or damage to physical property from occurring by taking appropriate measures or

(B) insure against such loss or damage

12. Contractor's risks

12.1 All risks of loss of or damage to physical property and of personal injury and death which arise during and in consequence of the performance of the Contract other than the excepted risks are the responsibility of the Contractor.

13. Insurance:

13.1 The Contractor shall prior to commencing the works, effect and thereafter maintain insurances , in the joint names of the Employer and the Contractor, (cover from the first working day after the Start Date to the end of Defects Liability Period), in the amounts stated in the Contract Data :

(a) for loss of or damage to the Works, Plants and Materials and the Contractor's equipment;

(b) for liability of both Parties for loss, damage, death and injury to third parties or their property arising out of the Contractor's performance of the Contract including the Contractor's liability for damage to the Employer's property other than the Works and

(c) for liability of both Parties and of any Employer's representative for death and injury to the Contractor's personnel except to the extent that liability arises from the negligence of the Employer, any Employer's representative or their Employees.

13.2 Policies and certificates for insurance shall be delivered by the Contractor to the Employer for his approval before the Start Date. All such insurance shall provide for compensation to be payable to rectify the loss or damage incurred. All payments received from insurers relating to loss or damage shall be held jointly by the Parties and used for the repair of the loss or damage or as compensation for loss or damage that is not to be repaired.

13.3 If the Contractor fails to effect or keep in force any of the insurances referred to in the previous sub-clauses or fails to provide satisfactory evidence, policies or receipts, the Employer may without prejudice to any other right or remedy, effect insurance for the cover relevant to such default and pay the premiums due and recover the same as a deduction from any other monies due to the Contractor. If no payments is due, the payment of the premiums shall be a debt due.

13.4 Alterations to the terms of an insurance shall not be made without the approval of the Employer.

13.5 Both Parties shall comply with any conditions of the insurance policies.

14. Site Investigation Reports:

14.1 The Contractor, in preparing the tender, shall rely on any site investigation reports referred to in the Contract data, supplemented by any information available to the Tenderer.

15. Queries about the Contract Data

15.1 The Employer will clarify queries on the Contract Data.

16. Contractor to construct the Works

16.1 The Contractor shall construct the Works in accordance with the Specification and Drawings.

17. The Works to be completed by the Intended Completion Date

17.1 The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the program submitted by the Contractor, as updated with the approval of the Employer, and complete them by the Intended Completion Date.

18. Approval by the Employer:

18.1 The Contractor shall submit Specification and drawings showing the proposed Temporary Works to the Employer, who is to approve them if they comply with the Specifications and Drawings.

18.2 The Contractor shall be responsible for the design of Temporary Works

18.3 The Employer's approval shall not alter the Contractor's responsibility for design of the Temporary Works.

18.4 The Contractor shall obtain approval of third parties to the design of third parties to the design of the temporary Works where required.

18.5 All Drawings prepared by the Contractor for the execution of the temporary or permanent Works, are subject to prior approval by the Employer before their use.

19. Safety

19.1 The Contractor shall be responsible for the safety of all activities on the Site.

20. Discoveries

20..1 Anything of historical or other interest or of significant value unexpectedly discovered on the Site is the property of the Employer. The Contractor is to notify the Employer of such discoveries and carry out the Employer's instructions for dealing with them.

21. Possession of the Site

21.1 The Employer shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date stated in the Contract Data the Employer is deemed to have delayed the start of the relevant activities and this will be Compensation Event.

22. Access to the Site

22.1 The Contractor shall allow the Employer and any person authorized by the Employer access to the Site, to any place where work in connection with the Contract is being carried out or is intended to be carried out and to any place where materials or plant are being manufactured / fabricated / assembled for the works.

23. Instructions

23.1 The Contractor shall carry out all instructions of the Employer which comply with the applicable laws where the Site is located.

24. Procedure for resolution of Disputes:

24.1 If the Contractor is not satisfied with the decision taken by the Employer, the dispute shall be referred by either party to Arbitration within 30 days of the notification of the Employer's decision.

24.2 If neither party refers the dispute to Arbitration within the above 30 days, the Employer's decision will be final and binding.

24.3 The Arbitration shall be conducted in accordance with the arbitration procedure stated in the Special Conditions of Contract.

B. Time Control

25. Program

25.1 Within the time stated in the Contract Data the Contractor shall submit to the Employer for approval a Program showing the general methods, arrangements, order, and timing for all the activities in the Works.

25.2 The Employer's approval of the Program shall not alter the Contractor's obligations. The Contractor may revise the Program and submit it to the Employer again at any time. A revised Program is to show the effect of Variations and Compensation Events.

26. Extension of the Intended Completion Date

26.1 The Employer shall extend the Intended Completion Date if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date.

26.2 The Employer shall decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking the Employer for a decision upon the effect of a Compensation Event or Variation and submitting full supporting information.

27. Delays ordered by the Employer

27.1 The Employer may instruct the Contractor to delay the start or progress of any activity within the Works.

28. Management meetings

28.1 The Employer may require the Contractor to attend a management meeting. The business of a management meeting shall be to review the progress achieved and the plans for remaining work.

28.2 The responsibility of the parties for actions to be taken is to be decided by the Employer either at the management meeting or after the management meeting and stated in writing to be distributed to all who attended the meeting.

C. Quality Control

29. Identifying defects

29.1 The Employer shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Employer may instruct the Contractor to search for a Defect and to uncover and test any work that the Employer considers may have a Defect

30. Tests

30.1 If the Employer instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples. If there is no Defect the test shall be a Compensation Event.

31. Correction of defects

31.1 The Employer shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion and is defined in the Contract Data. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.

31.2 Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified by the Employer's notice.

32. Uncorrected defects

32.1 If the Contractor has not corrected a Defect within the time specified in the Employer's notice, the Employer will assess the cost of having the Defect corrected, and the Contractor will pay this amount.

D. Cost Control

33. Bill of Quantities (BOQ)

33.1 The BOQ shall contain items for the construction, installation, testing, and commissioning work to be done by the Contractor.

33.2 The BOQ is used to calculate the Contract Price. The Contractor is paid for the quantity of the work done at the rate in the BOQ for each item

34. Variations

34.1 The Employer shall have power to order the Contractor to do any or all of the following as considered necessary or advisable during the progress of the work by him

(a) Increase or decrease of any item of work included in the Bill of Quantities (BOQ);
(b) Omit any item of work;
(c) Change the character or quality or kind of any item of work;
(d) Change the levels, lines, positions and dimensions of any part of the work;
(e) Execute additional items of work of any kind necessary for the completion of the works; and
(f) Change in any specified sequence, methods or timing of construction of any part of the work.

34.2 The Contractor shall be bound to carry out the work in accordance with any instructions in this connection, which may be given to him in writing by the Employer and such alteration shall not vitiate or invalidate the contract.

34.3 Variations shall not be made by the Contractor without an order in writing by the Employer, provided that no order in writing shall be required for increase or decrease in the quantity of an item appearing in the BOQ so long as the work executed conforms to the approved drawings.

34.4 The Contractor shall promptly request in writing to the Employer to confirm verbal orders and the officer issuing oral instructions shall confirm it in writing within 30 days, failing which the work shall be carried out as though there is no variation. In case variation is approved it shall be accompanied by BOQ, failing which the contractor shall be responsible for deviation if any. Further, approval of Govt. / BBMP has to be obtained for the variation exceeding 5%.

35. Payments for Variations

35.1 Payment for increase in the quantities of an item in the BOQ up to 25% of that provided in the Bill of Quantities shall be made at the rates quoted by the Contractor.

35.2 For quantities in excess of 125% of the tendered quantity of an item as given in the BOQ, the Contractor shall be paid at the rate entered in or derived from in the Schedule of Rates (applicable for the area of the work and current at the time of award of contract) plus or minus the overall percentage of the original tendered rates over the current Schedule of Rates prevalent at the time of award of contract.

35.3 If there is no rate for the additional, substituted or altered item of the work in the BOQ, efforts would be made to derive the rates from those given in the BOQ or the Schedule of Rates (applicable for the area of the work and current at the time of award of contract) and if found feasible the payment would be made at the derived rate for the item plus or minus the overall percentage of the original tendered rates over the current Schedule of Rates prevalent at the time of award of contract

35.4 If the rates for additional, substituted or altered item of work cannot be determined either as at 35.1 or 35.2 or 35.3 above, the Contractor shall be requested to submit his quotation for the items supported by analysis of the rate or rates claimed, within 7 days.

35.5 If the Contractor's quotation is determined unreasonable, the Employer may order the Variation and make a change to the Contract Price which shall be based on Employer's own forecast of the effects of the Variation on the Contractor's costs.

35.6 If the Employer decides that the urgency of varying the work would prevent a quotation being given and considered without delaying the work, no quotation shall be given and the Variation shall be treated as a Compensation Event.

35.7 Under no circumstances the Contractor shall suspend the work on the plea of non-settlement of rates for items falling under this Clause.

36. Submission of bills for payment

36.1 The Contractor shall submit to the Employer monthly bills of the value of the work completed less the cumulative amount paid previously.

36.2 The Employer shall check the Contractor's bill and determine the value of the work executed which shall comprise of (i) value of the quantities of the items in the BOQ completed and (ii) valuation of Variations and Compensation Events.

36.3 The Employer may exclude any item paid in a previous bill or reduce the proportion of any item previously paid in the light of later information.

37. Payments

37.1 Payments shall be adjusted for deductions for advance payments other than recoveries in terms of contract and taxes, at source, as applicable under the law. The Employer shall pay the Contractor the within 60 days of submission of bill. The contractor shall be liable to pay liquidated damages for shortfall in progress. For progress beyond the agreed programme payment is subject to availability of the grants.

37.2 Items of the Works for which no rate or price has been entered in will not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.

38. Compensation events

38.1 The following are Compensation events unless they are caused by the Contractor:

(a) The Employer does not give access to a part of the Site by the Site Possession Date stated in the Contract Data.

(b) The Employer orders a delay or does not issue drawings, specifications or instructions required for execution of works on time.

(c) The Employer instructs the Contractor to uncover or to carry out additional tests upon work which is then found to have no Defects.

(d) The Employer gives an instruction for dealing with an unforeseen condition, caused by the Employer, or additional work required for safety or other reasons.

(e) The effect on the Contractor of any of the Employer's Risks.

(f) The Employer unreasonably delays issuing a Certificate of Completion.

(g) Other Compensation Events listed in the Contract Data or mentioned in the Contract.

38.2 If a Compensation Event would cause additional cost or would prevent the work being completed before the Intended Completion Date, the Contract Price shall be increased and/or the Intended Completion Date is extended. The Employer shall decide whether and by how much the Contract Price shall be increased and whether and by how much the Intended Completion Date shall be extended.

38.3 As soon as information demonstrating the effect of each Compensation event upon the Contractor's forecast cost has been provided by the Contractor, it is to be assessed by the Employer and the Contract Price shall be adjusted accordingly. If the Contractor's forecast is deemed unreasonable, the Employer shall adjust the Contract Price based on Employer's own forecast. The Employer will assume that the Contractor will react competently and promptly to the event.

38.4 The Contractor shall not be entitled to compensation to the extent that the Employer's interests are adversely affected by the Contractor not having given early warning or not having cooperated with the Employer.

39. Tax

39.1 The rates quoted by the Contractor shall be **exclusive of GST or as specified in the notification**. The Contractor will have to pay for the performance of this Contract. The Employer will perform such duties in regard to the deduction of such taxes at source as per applicable law.

40. Price Adjustment

Conditions mentioned in G.O. No. FD 3 PCL 2008, Bangalore, Dated: 21.11.2008 & G.O. No. 791EXP-12/2015 Bengaluru Dated 26.02.2016

40.1 Contract price shall be adjusted for increase or decrease in rates and prices of labour, materials, fuels and lubricants in accordance with the following principles and procedures and as per formulae given in the Contract Data.[10]

(a) The price Adjustment shall apply for the work done from the date of commencement up to the end of original period of completion or extensions granted by the Employer and shall not apply to work carried out beyond the stipulated period of completion for reasons attributable to the Contractor;

(b) Price Adjustment shall be admissible from the date of opening of tenders (original or extended)

(c) The price adjustment shall be determined during each quarter from the formulae given in Contract Data.

(d) Following expressions and meanings are assigned to the work done during the quarter:

R = Total value of work done during the quarter. It will **exclude** value for works executed under variations for which price adjustment (if any) will be worked out separately based on the terms mutually agreed.

40.2 To the extent that full compensation for any rise or fall in costs to the contractor is not covered by the provisions of this or other Clauses in the Contract, the unit rates included in the contract shall be deemed to include amounts to cover the contingency of such other rise or fall in costs.

[10] Refer GOK Order No.FD 59 Pro.Cell 2004, Bangalore Dated 26th November 2004

41. Liquidated damages

41.1 The Contractor shall pay liquidated damages to the Employer at the rate per day stated in the Contract Data for each day that the Completion Date is later than the Intended Completion Date (for the whole of the works or the milestone as stated in the Contract Data). The total amount of liquidated damages shall not exceed the amount defined in the Contract Data. The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages does not affect the Contractor's liabilities.

41.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Employer shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment of bill.

42. Advance Payments:

42.1 The Employer shall make payment to the Contractor of the amounts stated in the Contract Data by the date stated in the Contract Data, against provision by the Contractor of an unconditional bank guarantee in a form acceptable to the Employer issued by a Nationalized/Scheduled Bank in amounts equal to the advance payment. The guarantee shall remain effective until the advance payment has been repaid, but the amount of the guarantee shall be progressively reduced by the amounts repaid by the Contractor. Interest will not be charged on the advance payment.

42.2 The Contractor is to use the advance payment only to pay for Mobilization expenses required specifically for execution of the Works. The Contractor shall demonstrate that advance payment has been used in this way by supplying copies of invoices or other documents to the Employer.

42.3 The advance payment shall be repaid by deducting proportionate amounts from payments otherwise due to the Contractor, following the schedule of completed percentages of the Works on a payment basis. No account shall be taken of the advance payment or its repayment in assessing valuation of the work done, variations, price adjustments, compensation events or liquidated damages.

43. Securities:

43.1 The Security deposit (including additional security for unbalanced tenders) shall be provided to the Employer no later than the date specified in the Letter of Acceptance and shall be issued in an amount and form and type of instrument acceptable to the Employer. The Security deposit shall be valid until a date 30 days from the date of expiry of Defects Liability Period and the additional security for unbalanced tenders shall be valid until a date 30 days from the date of issue of the certificate of completion.

44. Cost of Repairs:

44.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Correction periods shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions.

E. Finishing the Contract

45. Completion

45.1 The Contractor shall request the Employer to issue a Certificate of Completion of the Works and the Employer will do so upon deciding that the Work is completed.

46. Taking over

46.1 The Employer shall take over the Site and the Works within seven days of issuing a certificate of Completion.

47. Final account

47.1 The Contractor shall supply to the Employer a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Employer shall issue a Defect Liability Certificate and certify any final payment that is due to the Contractor within 90 days of receiving the Contractor's account if it is correct and complete. If it is not, the Employer shall issue within 90 days a schedule that states the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Employer shall decide on the amount payable to the Contractor and make payment within 60 days of receiving the Contractor's revised account.

48. As built drawings and /or Operating and Maintenance Manuals

48.1 If -as built□(*Completion drawings*) Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates stated in the Contract Data.

48.2 If the Contractor does not supply the Drawings by the dates stated in the Contract Data, or they do not receive the Employer's approval, the Employer shall withhold the amount stated in the Contract Data from payments due to the Contractor.

49. Termination

49.1 The Employer may terminate the Contract if the other party causes a fundamental breach of the Contract.

49.2 Fundamental breaches of Contract include, but shall not be limited to the following:

(a) The Contractor stops work for 45 days when no stoppage of work is shown on the current Program and the stoppage has not been authorized by the Employer;

(b) Deleted.

(c) The Contractor becomes bankrupt or goes into liquidation other than for a reconstruction or amalgamation;

(d) Deleted.

(e) the Employer gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Employer;

(f) the Contractor does not maintain a security which is required;

(g) the Contractor has delayed the completion of works by the number of days for which the maximum amount of liquidated damages can be paid as defined in the Contract data; and

(h) if the Contractor, in the judgment of the Employer has engaged in corrupt or fraudulent practices in competing for or in the executing the Contract.

For the purpose of this paragraph : -corrupt practice□ means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution. -Fraudulent practice□ means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among Tenderers (prior to or after Tender submission) designed to establish Tender prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition.□

49.3 When either party to the Contract gives notice of a breach of contract to the Employer for a cause other than those listed under Sub Clause 49.2 above, the Employer shall decide whether the breach is fundamental or not.

49.4 Notwithstanding the above, the Employer may terminate the Contract for convenience.

49.5 If the Contract is terminated the Contractor shall stop work immediately, make the Site safe and secure and leave the Site as soon as reasonably possible.

50. Payment upon Termination

50.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Employer shall prepare bill for the value of the work done less advance payments received up to the date of the bill, less other recoveries due in terms of the contract, less taxes due to be deducted at source as per applicable law and less the percentage to apply to the work not completed as indicated in the Contract Data. Additional Liquidated Damages shall not apply. If the total amount due to the Employer exceeds any payment due to the Contractor the difference shall be a debt payable to the Employer.

50.2 If the Contract is terminated at the Employer's convenience or because of a fundamental breach of Contract by the Employer, the Employer shall prepare bill for the value of the work done, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works and less advance payments received up to the date of the certificate, less other recoveries due in terms of the contract, and less taxes due to be deducted at source as per applicable law and make payment accordingly.

51. Property

51.1 All materials on the Site, Plant, Equipment, Temporary Works and Works are deemed to be the property of the Employer, if the Contract is terminated because of a Contractor's default.

52. Release from performance

52.1 If the Contract is frustrated by any event entirely outside the control of either the Employer or the Contractor the Employer shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which commitment was made

F. Special Conditions of Contract

1. Labour :

The Contractor shall, unless otherwise provided in the Contract, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment, housing, feeding and transport.

The Contractor shall, if required by the Employer, deliver to the Employer a return in detail, in such form and at such intervals as the Employer may prescribe, showing the staff and the numbers of the several classes of labour from time to time employed by the Contractor on the Site and such other information as the Employer may require.

2. **Compliance with labour regulations** :

During continuance of the contract, the Contractor shall abide at all times by all existing labour enactments and rules made there under, regulations, notifications and bye laws of the State or Central Government or local authority and any other labour law (including rules), regulations, bye laws that may be passed or notification that may be issued under any labour law in future either by the State or the Central Government or the local authority. The Contractor shall keep the Employer indemnified in case any action is taken against the Employer by the competent authority on account of contravention of any of the provisions of any Act or rules made there under, regulations or notifications including amendments. If the Employer is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated in the notifications/bye laws/Acts/Rules/regulations including amendments, if any, on the part of the Contractor, Employer shall have the right to deduct any money due to the Contractor including his amount of security deposit. The Employer shall also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the Employer.

The employees of the Contractor in no case shall be treated as the employees of the Employer at any point of time.

3. **Protection of Environment:**

The contractor shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of his methods of operation. During continuance of the contract, the contractor shall abide at all times by all existing enactments on environmental protection and rules made there under, regulations, notifications and bye-laws of the State or Central Government, or local authorities and any other law, bye-law, regulations that may be passed or notification that may be issued in this respect in future by the State or Central Government or the local authority.

4. **Arbitration (Clause 24)**

4.1 The procedure for arbitration shall be as follows:

(a) In case of dispute or difference arising between the Employer and the Contractor relating to any matter arising out of or connected with this agreement it shall be settled in accordance with the Arbitration and Conciliation Act 1996. The disputes or differences shall be referred to a Sole Arbitrator. The Sole Arbitrator shall be appointed by agreement between the parties; failing such agreement, by the Appointing Authority (any one of the Organizations as per list enclosed in Annexure)

(b) Arbitration proceedings shall be held at Bangalore in Karnataka state (to be filled in by the Employer before issue of the Tender Documents),

(c) The cost and expenses of arbitration proceedings will be paid as determined by the Arbitrator. However the expenses incurred by each party in connection with the preparation, presentation, etc., shall be borne by each party itself.

(d) Performance under the contract shall continue during the arbitration proceedings and payments due the Contractor by the Employer shall not be withheld, unless they are the subject matter of the arbitration proceedings.

OTHER CONDITIONS

1 General

The Contractor is advised to note that the following Other Conditions are part of the Contract and he will not have any right to claim at any time for delays or for expenditure incurred by him in fulfilling the following special conditions.

2. Scope of Works

a) Site clearance, demolition works, earthworks, temporary works, Traffic diversion, Barricading the construction site, and all ancillary works as shown on the Drawings and deemed necessary for the carrying out of temporary and permanent construction works;

b) Widening/re-cambering/raising/milling down and overlaying of existing carriageways, flexible/rigid pavement at at-grade road intersections and accesses to adjoining developments;

c) Trees cutting (if any) as indicated in the Drawings;

d) Excavation of trenches;

e) Construction of Utility ducts, Culvert as per the drawing.;

f) Construction of footpath, , kerbs, , and other road-related facilities;

g) Formation of embankments;

h) Supply and install new traffic signage, directional signage, street name signs and re-sitting of such existing signs and other road signs to be retained, inclusive of support and foundations by Manufacturer of Retro Reflective ASTM Type XI sheet or their Indian subsidiary;

i) Supply and installation of new Electric poles and light fittings as shown in the Drawings;

k) Temporary and permanent diversion and restoration of footpath, drains, roads and street furniture including the supply and painting of road/lane markings for all temporary and permanent carriageway in accordance with the Employer's requirements and to the satisfaction of the Engineer;

l) Re-sitting/reconstruction of existing fencing, posts, gates, footpaths, signages, boundary walls, guardrails, railings, parapet walls, bollards, and all others affected by the Works. The boundary wall/fencing affected shall be reconstructed to a standard equal to or better than the existing condition of the boundary wall/fencing, abutting the road reserve line and to its current exposed height with new foundation after raising of the road level to the proposed level;

m) All other works and services ancillary or related to the full completion of the Works in accordance with the Employer's requirements.

All the Contract Works shall be executed in full compliance with the Specifications of the Contract and all requirements and always to the satisfaction of the Employer.

The Contractor shall have to be inspected, tested and examined the site and surroundings and to have satisfied himself as to all the conditions, factors and risks which can be reasonably obtained or inferred from the inspections, tests and examinations that may influence or affect the progress and cost of Contract Works. In this connection to understand the local issues and the nature of the work, the Tenderer shall visit the site with the relevant department Engineer In charge and obtain the Certificate from the concerned Executive Engineer in charge and same should be uploaded for evaluation, otherwise the BBMP Bangalore reserves the right to accept/reject such tenders without assigning any reason.

The Contractor shall resolve local constraints and problems, liaise, seek, and obtain any consent, permit, license, approval, etc. from all Relevant Authorities including paying all fees, charges, levies, etc all at his own cost.

Clearing all debris and disposing to location approved by BBMP during progress of Contract works and before and after the dates of Completion.

3. Additional Work

Any additional works, instructed during the Contract Period and within the Contract Amount, will be paid as per Schedule of Quantity rates and it shall not be considered as a cause for the Contractor to claim for delay, incurred overhead, mobilization etc.

4. Defect Liability Period

The Contractor shall be responsible for replacing any defective work and rectifying any defects in this works and maintaining the same during the Defect Liability Period free of cost. For this purpose, the Contractor shall retain in charge Engineer at site who shall be always available as Bidders representative in dealing with employer during the Maintenance Period which shall run concurrently along with the defects liability period.

The Defect Liability Period shall be 12 months from the next day of issue of Completion Certificate/Completion of works in all respect as per Contract and recommendation of certified final bill by BBMP/PMC

5. Public Utilities

It is clearly understood that any damage occurring to the Works (completed or under execution) is the Contractors responsibility and no claims will be entertained by the Employer since the matter shall be covered by the relevant Insurances.

Any services affected by the Works must be temporarily supported by the Contractor who must also take all measures reasonably required by the various bodies to protect their services and property during the progress of the works.

The work of temporarily supporting and protecting the public utility services during execution of the Works shall be deemed to be part of the Contractor and no extra payment shall be made for the same.

Maintenance of the existing road shall be done by the contractor from the date of commencement of the Tender work till the completion of work at the cost of the agency without affecting the vehicle traffic.

6. Materials for work

Steel & Cement should be procured by primary producers only. The list of primary producers such as:

a) Cement: Ultratech, ACC, Gujarat Ambuja, J. K. Cement & Grasim (Birla Super).
b) Steel: Primary Sources namely: TISCO, SAIL, JSW, RINL.

The contractor shall ensure the project road is maintained in traffic worthy and motorable condition till completion and handing over of the project. In this regard, no extra payment will be paid by BBMP whatever the reason may be. The rate quoted by the agency shall be inclusive of expenditure to be made towards maintenance of the existing road during the entire construction period.

7. Credit of Salvage Values of Dismantled Materials

I. All salvage materials as listed in the following Schedule of Credit shall become the property of contractor (when the work is awarded on tender basis) and the materials can be removed from the site only after the recovery has been made from the contractor and after obtaining written instructions from EIC".

II. The materials enumerated below shall become the property of the contractor. These materials shall be allowed to be removed from site only after the credit amount is recovery from immediate interim/final bill (which ever submitted earlier).

III. The rate fixed by department is firm. The contractor shall have no claim whatsoever against the department if actual rate turns out to be different from the rates inserted by the department.

IV. The amount of credit in respect of items shown below shall be provisional and actual quantities shall be measured in MB against each item shall be considered for arriving total amount of credit.

V. Items if any obtained from demolition/dismantling but not listed below shall become the property of government and accordingly shall be handed over to BBMP without any extra payment.

Table showing the Schedule of Credit for Dismantled materials

Sl No /Item No	Items	Unit	Quantity in BOQ	Quantity of Re usage materials Can seggregated/Unit	Current Material Rate as per SOR 18-19 Material	Salvage rate considered/Unit	Amount(Rs)	Remarks
1	2	3	4	5	6	7	8=5x7	9
1	Telephone/Name board/signal post/Electrical poles	Nos	77	0		25	0	All Electri poles are very old and is active condition, entilre poles to be handed over to BBMP Electrical maintanance department.
2	Barbed wire fensing	m	150	225 kg/150m length	Rs55.08/kg	Rs20/kg	4500	Scrape material for re cycle
3	Wrought iron/steel	Tonne	2	2	37290/tonne	15000/tonne	30000	Scrape material for re cycle
4	Brick/Size Stones	Cum	268	107	666.67/cum	200/cum	21440	can be re used
5	RCC with Hysd steel	Cum	1955	Hysed steel 2kg/cum=3910kg (3.9t) for 1955cum	Rs41119/tonne issue rate for July 2020	Rs20560/tonne	80389.6	Scrape material =3.9x20560
	Total Salvage						136329.6	

7. Contractor's Other Obligations

a. In the case of the death of a Contractor after executing the agreement / commencement of the work, his legal heir, if an eligible registered Contractor and willing can execute and complete the work at the accepted tender rates irrespective of the cost of the work.

b. Mix Designs for Concrete and Asphalt work shall be got approved by Chief Engineer before commencement of Work.

c. The Contractor shall execute the work in minimum two shifts (Day & Night) for speedy completion of work and to minimize inconvenience to public.

d. The Contractor should have his own/got tested through NABL Accredited laboratory for Quality Control / Quality Assurance of the whole work.

e. Tenderer should have registered with EPF and ESI authorities; certification should be produced at the time of tendering OR else before entering in to the Agreement.

f. GST Shall be paid to the tendered amount separately.

g. The Hot Mix Plant (HMP) should be located in within 40 Km from Vidhana Soudha.

h. The ownership/Lease or Hire agreement for Hot Mix Plant (HMP) shall be inspected by the evaluator during the Technical Evaluation.

8. List of Minimum Key Personnel to be deployed by the Contractor at site

TABLE – 1

Sl. No	Position	Qualifications	Number of personnel
1	Project Manager	B.E. Civil + 15 Years minimum Construction experience (including 5 years as Project Manager on Road works)	One
2	Design Co ordinator/Transportation Engineer	B.E. Civil + 15 Years minimum Construction experience (including 3 years in road construction & design)	One
3	Construction Engineers	B.E. Civil + 5 Years minimum Construction experience (5 years on Road and Building construction)	Four
4	Material / Quality / Quantity Engineer	B.E Civil + 10 Years minimum experience (including 5 years on Road construction as Material / QC Engineer)	One
5	Planning Engineer	B.E Civil + 10 Years minimum experience in MS Project.	One
6	Safety Engineer	Diploma in Civil with 12 Years minimum experience.	One
7	Laboratory Technician	D.C.E. + 5 years minimum experience in Road , Building and bridge Construction in Q.C. Laboratory	One
8	Electrical Technician	ITI Electrical + 10 years minimum experience	One
9	Auto CADD Draftsman	Diploma Civil + 5 years minimum experience	One
10	Accountant	B. Com + 10 years minimum experience in Infrastructure Projects	One
11	Store Keeper	Graduate in any discipline + 10 years minimum experience in Infrastructure Project.	One

Tree Cutting

The Contractor shall notify the Engineer prior to commencement and on completion of each

trimming of trees, shrubs, turfing etc. in order that a joint site inspection can be made.

The maintenance of trees, plants and grass shall include watering, weeding, fertilising and cutting twice per month as specified and maintaining its growth in a tidy and satisfactory state. Fifty percent of the payment shall be reserved during maintenance periods and shall be released after the maintenance period is completed.

Post DLP, Maintenance clause is applicable for 36months as per BBMP's circular No.A/P.S.R/G-
5317/12-13 issued dated 24/09/2012. During this period, the Contractor shall maintain drains, landscaping and other works to the satisfaction of the Engineer and the employer.

Project Site Office

The Contractor shall provide and maintain adequately minimum requirement of furnished Site office as required for Site Control on the Quality of work, monitoring the Works. It shall have a minimum of 40 Sqm Area. The Site office shall be located as directed by the Employer or his approved Representative. It shall be provided with Amenities like Water Supply, Electric Supply, etc. The site office will have all Services, Furniture, Equipments, etc. Minimum of the following Items shall be provided in the site office,Table and Chairs,Computer systems, Almeraha for keeping site records. This office should also share with Project Management Consultants representative of Engineer In charge.

Royalties

The Employer shall deduct Royalties on materials used in the Works from the progress payments to the Contractor at the rates specified in the most recent "Amendment to the Karnataka Minor Minerals Concession Rules - 1969" as published by the Commerce and Industries Department (Mines) and as illustrated in Annexure-1, attached.

Site Order Book

The Contractor shall maintain an identical pair of Site Order Books (one marked original and the other marked duplicate), at the Site at all times during the execution of the Works for the use of the Engineer and the Contractor. All instructions issued by the Engineer to the Contractor shall be recorded in both sets of the Site Order Book and shall be signed by the issuer and countersigned by the Contractor. After compliance with the instruction, the Contractor shall record the same in both sets of the Site Order Book duly signed and countersigned by the Engineer. Acceptance of any part of the work executed by the Contractor shall be subject to verification with respect to compliance of respective instructions of the Engineer through the Site Order Book. The Engineer shall retain the original copy of the Site Order Book, while the Contractor shall retain the duplicate one.

Quarry Materials

The Contractor shall be wholly responsible to identify the suitable sources for quarry materials required for the Works, such as earth, sand, stone, muram, etc., and to make his own arrangements for collection and transportation of the materials irrespective of the leads and lifts required. The quarry thus identified by the Contractor should have proper license from the Government of Karnataka. All materials supplied by the Contractor shall satisfy the requirements set forth in the Specifications and shall be subject to the approval of the Engineer. The Contractor shall take this into account while offering his rates and no claims whatsoever shall be entertained for extra costs on this account.

Annexure:

LIST OF ORGANIZATIONS WHO ARE CONSIDERED AS APPOINTING AUTHORITY FOR APPOINTMENT OF ARBITRATORS[11]

Arbitration Centre, Khanija Bhavan, Bengaluru

SECTION 6: CONTRACT DATA

Items marked "N/A" do not apply in this Contract.

The following documents are also part of the Contract:	Clause Reference
• The Schedule of Operating and Maintenance Manuals	[48]
• The Methodology and Program of Construction	[25]
• Site Investigation Reports	[14]
• The Schedule of Key and Critical Equipment to be deployed on the work as per agreed program of construction.	[25]

The Employer is :

[1.1]

Name: The Commissioner
Address: BBMP, N.R. Square Bangalore-02
Name of authorized Representative: Executive Engineer
Road Infrastructure –Dasarahalli Division
No 207, Annex Building-3, 2nd Floor,
N.R. Square, Bengaluru - 560002

The name and identification number of the Contract is
Widening and Comprehensive Development of Abbigere Main Road from Renaissance Woods -3 Apartment to Abbigere Park

[1.1]

The Works consist of Widening and Comprehensive Development of Abbigere Main Road from Renaissance Woods-3 Apartment to Abbigere Park

The start date shall be the 15th day from the date of issue of notice to proceed with the work. [1.1]

The Intended Completion Date for the whole of the Works is 12 (Twelve)months [12] with the following milestones [17, 26]

Milestone dates:

Physical works to be completed	Period from the date of issue of Notice to proceed with the work

Milestone Dates are shown in the Table below

The Site Possession Date is:[13] 15th day from the date of work order. [21]

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[12] At the time of preparation of the tender document give the period required for completion of whole work and the milestones. When the Agreement is drawn after award of contract the dates can be put in.
[13] At the time of preparation of the tender document give the period after the issue of work order, when the site would be made available to the contractor, for example „one week after the issue of work order

The Site is located at **Dasarahalli Zone** [1.1]
and is defined in drawings

Mail stones	Work to be completed	Duration	Amount of Progress	Percentage of Progress
Mail stone -1	Site Clearance , dismantling of Buildins which are acquired for widenings, Manholes, Earth work up to Subgrade, 20% legth of Drain	6	16959431	22%
Mail stone-2	Drain about 50% length, GSB,WMM,Kerb, 7m wide Main carriage way with DBM,	3	34461117	44%
Mail stone-3	Balance 30% length of Drain, Foot Path, Service road,	2	23539374	30%
Mail stone-4	Completion of project in all respect	1	3453550	4%
Total		12	78413471	100%

The Defects Liability Period is 12 Months from the date of completion of Work/Project [31]

Insurance requirements are as under: [13]

	Type of Cover	Minimum cover for Insurance[14]
(i)	Works and of Plant and materials	The sum stated in the Agreement plus 20%
(ii)	Loss or damage to equipment	Full replacement cost
(iii)	Loss or damage to property of Third Party	Full replacement cost
(iv)	Personal injury or death insurance (a) for Third Party[15]	
	(b) for Contractor's employees or labour	In accordance with the statutory requirements applicable to Karnataka

Price Adjustment Formula;[16] [40]

R= Value of work as defined in Clause 40.1 of Conditions of Contract.

Adjustment for labour component:

(i) Price adjustment for increase or decrease in the cost due to labour shall be paid in accordance

with the following formula:

$V_L = 0.85 \times P_L / 100 \times R \times (L_i - L_o) / L_o$ Where,

V_L = Increase or decrease in the cost of work during the quarter under consideration due to changes in rates for local labour;

L_o = The average consumer price index[17] for industrial workers for Bangalore Centre for the quarter preceding the date of opening of tenders as published by the Labour Bureau, Ministry of Labour, Government of India;

L_i = The average consumer price index for industrial workers for Bangalore Centre for the quarter under consideration as published by Labour Bureau, Ministry of Labour, Government of India

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[14] Employer to specify as per requirement. Exclusions if any should also be specified.
[15] Specify an appropriate figure. For normal works it could be Rs.20 lakhs to cover 4 persons @Rs.5 lakhs each.
[16] The Formula has some normal components. It should be changed if need be to suit the nature of the work.
[17] The Index numbers are available in the web site *http://labourbureau.nic.in/indtab.html*

P_L = Percentage of labour component of the work

Adjustment for Cement Component:

(ii) Price adjustment for increase or decrease in the cost of cement component procured by the contractor shall be paid in accordance with the following formula.

$$V_C = 0.85 \times P_C/100 \times R \times (C_i - C_o)/C_o \text{ , Where,}$$

V_C = Increase or decrease in the cost of the work during the quarter under consideration due to changes in the rates for cement;

C_o = The all India average wholesale price index [18]for cement (Ordinary Portland Cement) for the quarter preceding the date of opening of the tenders as published by the Office of Economic Advisor, Ministry of Commerce and Industry, Government of India , New Delhi;

C_i = The all India average wholesale price index for cement (Ordinary Portland Cement) for the quarter under consideration as published by the Office of Economic Advisor, Ministry of Commerce and Industry, Government of India, New Delhi

P_C = Percentage of cement component of the work

Note: For the application of this clause index of Ordinary Portland Cement[19] has been chosen to represent Cement Group

Adjustment for steel component:

(iii) Price adjustment for increase or decrease in the cost of steel procured by the contractor shall be paid in accordance with the following formula.

$V_S = 0.85 \times P_S/100 \times R \times (S_i - S_o)/S_o$ where,

V_S = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates for steel;

S_o = The all India average wholesale price index for steel (M.S.Bars and rods) for the quarter preceding the date of opening of Bids as published by the Office of Economic Advisor, Ministry of Commerce and Industry, Government of India, New Delhi

S_i = The all India average wholesale price index for steel (M.S. Bars and Rods) for the quarter under consideration as published by the Office of Economic Advisor, Ministry of Commerce and Industry, New Delhi

P_S = Percentage of steel component of the work

Note: For the application of this clause, index of M.S.Bars and Rods[20] has been chosen to represent steel group.

Adjustment of Bitumen Component:

(iv) Price adjustment for increase or decrease in the cost of bitumen shall be paid in accordance with the following formula:

$$V_B = 0.85 \times P_B/100 \times R \times (B_i - B_o)/B_o \text{ , Where}$$

V_B = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate for bitumen.

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[18] The index number are available in the web site *http://eaindustry.nic.in*

[19] This may be changed to any other type of cement depending on the nature of work.

[20] This may be changed depending on the major type of steel used depending on the nature of work

B_o = The official retail price of bitumen at the IOC /HPCL/BPL or any other depot at ..... [21]on the day 30 days prior to the date of opening of Bids.

B_i = The official retail price of bitumen at the IOC/HPCL/BPL or any other depot at ..... for the 15th day of the middle calendar month of the quarter under consideration.

P_B = Percentage of bitumen component of the work.

Adjustment of Fuel and Lubricant component:

(v) Price adjustment for increase or decrease in cost of Fuel and Lubricants shall be paid in accordance with the following formula:

$$V_F = 0.85 \times P_F/100 \times R \times (F_i - F_o)/ F_o, \text{ Where,}$$

V_F = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates for Fuel and Lubricants.

F_o = The official retail price of High Speed Diesel (HSD) at the IOC/HPCL/BPL or other consumer pump at Bangalore on the day 30 days prior to the date of opening of Bids.

F_i = The official retail price of HSD at the IOC/HPCL/BPL or other consumer pump at Bangalore for the 15th day of the middle calendar month of the quarter under consideration.

P_F = Percentage of Fuel and Lubricant component of the work.

Note: For the application of this Clause the price of HSD[22] has been chosen to represent Fuel and Lubricant Group

Adjustment for Plant and Machinery Spares Component:

(vi) Price adjustment for increase or decrease in the cost of plant and machinery spares procured by the contractor shall be paid in accordance with the following formula:

$$V_P = 0.85 \times P_P/100 \times R \times (P_i - P_o)/P_o \text{ , Where}$$

V_P = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates for plant and machinery spares.

P_o = The all India average wholesale price index for Heavy machinery and parts for the quarter preceding the date of opening of bids, as published by the Office of the Economic Advisor, Ministry of Commerce and Industry, Government of India, New Delhi

P_i = The all India average wholesale price index for Heavy machinery and parts for the quarter under consideration as published by the Office of the Economic Advisor, Ministry of Commerce and Industry, Government of India, New Delhi

P_B = Percentage of Plant and Machinery Spares component of the work.

Note: For the application of this Clause index of Heavy Machinery and Parts[23] has been chosen to represent the Plant and Machinery Spares Group.

Adjustment for Other materials.

(vii) Price adjustment for increase or decrease in the cost of other materials other than cement, steel, bitumen and Fuel and Lubricants[24], procured by the contractor shall be paid in accordance with the following formula:

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[21] Insert the nearest location of POL Depot

[22] This could be appropriately changed to any other item depending on the nature of work.

[23] This could be appropriately changed to any other item depending on the nature of the work.

$V_M = 0.85 \times P_M/100 \times R \times (M_i - M_o)/M_o$, Where

V_M = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates for local materials other than cement, steel, bitumen and Fuel and Lubricants.

M_o = The all India average wholesale price index for all commodities for the quarter preceding the date of opening of bids, as published by the Office of the Economic Advisor, Ministry of Commerce and Industry, Government of India, New Delhi

M_i = The all India average wholesale price index for all commodities for the quarter under consideration as published by the Office of the Economic Advisor, Ministry of Commerce and Industry, Government of India, New Delhi

P_M = Percentage of other material component (Other than cement, steel, bitumen and Fuel and Lubricants) of the work.

The following percentages [25] will govern the price adjustment for the entire contract: [26]

1.	Labour – P_L	25.00 %
2.	Cement – P_C	14.00 %
3.	Steel – P_S	05.00 %
4.	Bitumen – P_B	18.00 %
5.	Fuel and Lubricants – P_F [27]	10.00 %
6	Plant and Machinery Spares – P_P [28]	5.00.%
7	Other materials – P_M	23.00.%
	TOTAL	**100.00 %** [29]

The liquidated damages for the whole of the works are **Rs. 78560, /-** (amount) per day[30] and that for the milestones are as under:

The maximum amount of liquidated damages for the whole of the works is Ten percent of final contract price. [41]

Mail stone	Penalty/day	Total Amount of Penalty	Max Penalty 10% of Contract Value
M-1	78413.47	3136538.851	7841347.127
M-2	78413.47	2744471.494	
M-3	78413.47	1960336.782	
M-4			
Total		7841347.127	

The amounts of the advance payment are: [42]

[24] Add, delete or change depending on the nature of work.
[25] The percentages have to be approximately worked out on the estimates of cost and incorporated in the tender document before issue. It shall not be changed even if there is change of scope of work during execution.
[26] The components could be added or deleted or changed depending on the nature of the work.
[27] This could vary from 5% for normal works and 10% for highly mechanized operations in the work
[28] This could vary from 15% for normal works to 30% for highly mechanized operations in the work
[29] The total of the percentages for the various components of the works should be 100.
[30] The amount is usually computed on the basis of 0.1% of the contract price per day. The amount has to be specified as a round figure nearest to the hundred.

Nature of Advance	Amount (Rs.)	Conditions to be fulfilled
1.mobilization	5% of the Contract price	On submission of un-conditional Bank Guarantee. (to be drawn before end of 20% of Contract period)

(The advance payment will be paid to the Contractor no later than 30 days after fulfillment of the above conditions).

Repayment of advance payment for mobilization : [42]

The advance loan shall be repaid with percentage deductions from the interim payments certified by the Engineer under the Contract. Deductions shall commence in the next Interim Payment Certificate following that in which the total of all such payments to the Contractor has reached not less than 15 percent of the Contract Price or ——[31]months from the date of payment of first installment of advance, whichever period concludes earlier, and shall be made at the rate of 7.5% percent of the amounts of all Interim Payment Certificates until such time as the loan has been repaid, always provided that the loan shall be completely repaid prior to the expiry of the original time for completion pursuant to Clauses 17 and 26.

[32]The date by which -as-built[33] drawings (in scale ...[34]) in 2 sets are required is within 30 days of issue of certificate of completion of Whole or Section of the Work as the case may be. [48]

[35]The date by which Operating and Maintenance Manuals are required is within 30 days of issue of certificate of completion of Whole or Section of the Work as the case may be. [48]

Theamounttobewithheldforfailingtosupply-asbuilt drawings orsupplyof Operation and Maintenance Manuals by the date required is Rs.1,50,000/-
(The amount should be sufficient to get the completion drawings or Operating and Maintenance Manuals prepared by alternative agency in case the contractor fails to submit.) [48]

The following events shall also be fundamental breach of the contract : [49.2]

1. The contractor has contravened Sub-clause 7.1 and Clause 9 of CC.

The percentage to apply to the value of the work not completed representing the Employer's [50.1]

Additional cost for completing the Works shall be 30 percent (30%) .
(Change if need be. It should be sufficient to get the balance of works completed by alternative agency.)

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[31] To be filled up by the Employer before issue of the tender document; say „Three or four months
[32] Score out which ever is not applicable.
[33] Completion drawings
[34] Specify an appropriate scale
[35] Score out which ever is not applicable.

SECTION 7: SPECIFICATIONS

1 Preamble

This section contains the specifications for proposed work and shall be read in conjunction with the various other sections forming the Contract namely Notification Inviting Applications, Instructions to Tenderers, General Conditions, Special Conditions, Bill of Quantities, Drawings and other related documents mentioned in this Tender Document together with any Addendum issued thereto.

2. General Specifications

2.1 This shall comprise with the Specification of MORTH specifications for Road and Bridge Works (most recent Revision) published by Indian Roads Congress, New Delhi latest reprinted version and shall be deemed to be bound into this document.

3. Specifications for materials, plant and machinery

3.1 Material

All materials to be provided by the Contractors shall be in conformity to the specifications laid down in the Contract and the Contractor shall if required by the Engineer-in-Charge furnish proof about their suitability and fitness to the entire satisfaction of the Engineer-in-charge.

3.2 Storage of Materials

All materials brought and kept at site of work by the Contractor or by his orders for the purpose of forming part of the works are to be considered to be the property of the office of ... and the same shall not to be removed or taken away by the Contractor or any other person without the permission of the Engineer-in-Charge. But the Engineer-in-Charge shall not be responsible for any loss or damage which may occur to or in respect of any such work or materials either by the same being lost or stolen or damaged by weather or otherwise including natural calamities (flood, earthquake, rains, riots, fire, etc.).

i. Materials required for the works shall be stored by the Contractor only at places, in standard profiles and in the manner as approved by the Engineer-in-Charge. Storage and safe custody of all materials shall be the sole responsibility of the Contractor. Special care should be taken as per relevant specification for storage of bitumen etc.

ii. The Contractors shall construct suitable go-down at the site of work for storing the material safe against damage due to sun, rain, dampness, fire, theft etc. He shall also employ necessary security measures for the purpose and no extra claim whatsoever shall be entertained on this account.

iii. From commencement till completion, all materials and works shall be under the safe custody of Contractor. The Contractor is solely responsible for and to make good all injuries, damages and repairs accrued to or rendered necessary to the same by fire, storm, rain, traffic or other causes and to hold the Engineer-in-Charge indemnified from any claim for injuries to person or for structural damage to property occurring from only neglect, default, want of proper care or misconduct on the part of the Contractor.

iv. The Contractor shall produce samples of all materials to be procured by him sufficiently in advance to obtain approval of the Engineer-in-Charge. Subsequently the materials to be

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used in the actual execution of the work shall strictly conform to the quality of samples approved. In case of variation in quality such materials shall be liable for rejection. The rejected materials shall be removed from the site within 48 hours of their rejection, also the Engineer-in-Charge shall be authorised to remove the same at the risk and cost of the Contractor.

3.3 Quality control and Testing of Materials

i. The Contractor at his own expense shall make arrangements with necessary equipment to carryout tests such as grading of aggregate, fineness modulus of sand, bulking of sand, silt content in sand, tests on cement and concrete etc., at the site of work. The Contractor shall be required to provide appliances at site such as weighing scale, graduated cylinder, standard sieves, three wooden / metal board of size 0.5 x 0.5 mtr = 0.25 sqm area, one digital contact thermometer, two screw drivers, one measuring scale, camber board, depth gauge, three meter long wooden or aluminum beam or straight edge, one graduated scale bit or wedge scale, etc., in order to enable the Engineer-In-Charge to conduct field tests, whenever required by him to ensure that the quality is consistent with the prescribed specification. Similarly well-equipped laboratory for testing of concrete, aggregates including earth work shall be provided by the Contractor at site of work.

ii. Materials including but not limited to water, sand, cement and aggregate to be used in the works such as concrete, masonry, road work, shall pass all the tests and analysis required.

iii. All the necessary tests shall be conducted in the laboratory established at site by the Contractor or in any recognized laboratory approved by the Engineer-in-Charge. The samples shall be taken for carrying out all or any of the tests stipulated in the particular specifications or as directed by the Engineer-In-Charge or his authorized Representative. The Contractor shall at his risk and cost make all arrangements and shall provide all such facilities as the Engineer-in-Charge may require for collecting, preparing, forwarding the required number of samples for test and for analysis as per the frequency of test stipulated in the Contract specifications or as considered necessary by the Engineer-in-Charge.

iv. The decision of the Engineer-in-Charge regarding type of tests, their frequency, suitability of any of the materials to be used in the work shall be final and binding on the Contract or notwithstanding any other provision elsewhere in the tender Documents.

v. The Contractor or his authorised Representative shall co-operate in collection, preparation, forwarding and testing of such samples. Even if he, or his authorised Representative is not present, the result of such tests and consequences thereon shall be binding on the Contractor provided the Contractor has been provided with prior intimation of such tests. The Contractor or his authorised Representative shall remain in contact with the Engineer-in-Charge or his authorised Representative for the conduct of all such operations.

vi. The Contractor shall give not less than 3 days' notice of all tests in order that the Engineer-in-Charge or his authorised Representative may be present. The Contractor shall supply two copies of all test certificates to the Engineer -in - Charge for approval, immediately after the completion of the tests. Test certificates shall invariably be supplied to the Engineer - in Charge before the material or components are used in the works, unless the Engineer-in-Charge directs otherwise.

vii. All materials, which are specified to be tested, at the place of manufacture, shall satisfactorily pass the test before being used in works.

viii. Other Materials
Any material, for which there is no relevant Indian Standard, shall be the best of their kind and to the approval of the Engineer-in-Charge. Contractor shall at his own expense, submit to the Engineer-in-Charge for approval, samples of any of the materials and components to be used. The quality of materials and components subsequently used in the works shall not

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be inferior to the approved samples.

3.4 Construction Equipment

i. The methodology and equipment to be used on the project shall be furnished by the Contractor to the Engineer-in-Charge well in advance of commencement of work and approval obtained prior to its adoption and use.

ii. The Contractor shall give a trial run of the equipment for establishing the capability to achieve the laid down specification and tolerance to the satisfaction of the Engineer-in-Charge before commencement of work.

iii. All equipment provided shall be of proven efficiency and shall be operated and maintained at all times in a good working condition.

iv. No equipment or personnel shall be removed from the site without prior permission of the Engineer-in-Charge.

v. No tools and plants will be supplied by the department and the Contractor will have to make his own arrangements at his expense.

All construction tools, plant and machineries provided by the Contractor shall, when brought to the site, be deemed to be exclusively intended for the construction and completion of this work and the Contractor shall not remove the same or any part thereof (save for the purpose of moving it from one part of the site to another) without the written permission of the Engineer-in-Charge.

Other specifications listed shall be referred to as necessary:-

1. Karnataka Building specification
2. Karnataka Standard rate analysis for building.
3. Karnataka roads and bridges specifications.
4. Karnataka standard rates analysis for roads and bridges.
5. MOST specification
6. National building code and BIS Specification.
7. For water supply and sanitary works – Bangalore Water Supply and Sewerage Board (BWSSB) - Technical Specification.

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4.0 CONTRACTOR'S GENERAL OBLIGATION

4.1 SITE RESPONSIBILITY CHART

4.1.1 The Contractor shall submit, within 15 days after the Date of Commencement of the Contract, a site responsibility chart to show the functions and responsibilities of various personnel from the Project Manager to the workmen responsible for executing the Works, as well as the functions and responsibilities of the sub-contractors involved.

4.1.2 The key representatives (Project Manager, Design Co-ordinator, Construction Managers, Safety and site engineers and site supervisors, etc.) proposed by the Contractor shall possess similar work experiences in construction works as required for this Contract. The Contractor shall submit curriculum vitae (CV) and particulars of the project team including name, designation, appointment, qualification, relevant experience and responsibilities, etc. to the Engineer for approval.

4.1.3 The Contractor shall submit an Organisation chart including but not limited to the following project team members, all full-time on site unless otherwise specified, to manage the Works:

a) Project Manager with at least 10 years relevant experience and a Degree in Civil Engineering.

b) Site Engineers in Civil &MEP with at least three (3) years relevant experience in respective branches and a Degree in Engineering in respective branches;

c) Planning engineer with at least five (5) years relevant experience with a Degree in Civil Engineering.;

d) Plant Engineer with Degree /Diploma in Mechanical Engineering with three or seven (3/7) years of relevant experience respectively;

e) Quality controlling Engineer with Degree /Diploma in Civil Engineering with three or seven (3/7) years of relevant experience respectively;

f) Quantity Surveyor Degree /Diploma in Civil Engineering with three or seven (3/7) years of relevant experience respectively;

g) Land Surveyor (part-time);

h) Safety and Health Supervisor;

i) Site Supervisor/Foreman with relevant experience in road construction and traffic control with certificate in Pavement Construction and Maintenance awarded by _____ (Authority);

j) Qualified Supervisor for Temporary Traffic Control;

k) Licensed Cable Detection Worker, whenever required; and

l) Lifting Supervisors with certificate in Lifting Operations awarded by Building _____ (Authority).

The Contractor shall note that the number of personnel specified above is the minimum required for the Contract. The actual number of personnel shall be increased by the Contractor where situations arise in relation to the Works which require more supervision effort.

4.2 SETTING OUT AND EXISTING LEVELS

4.2.1 The Contractor shall take levels and set out for the whole of the Works including other surveying works throughout the construction and Defects Liability Period as and when required by the Engineer.

4.2.2 The Contractor shall determine and mark out on site the minimum clearance where the proposed structures cross over the existing carriageways and shall inform the Engineer within a month of award of the Contract.

4.2.3 The information on existing levels as shown on the Drawings is provided in good faith for the general guidance of the Contractor. The Contractor is to note that accuracy of information shown on the Drawings is not guaranteed. The Contractor shall visit the site and carry out field surveys if he considers it necessary to ascertain the full extent of the Works.

4.2.4 Within one week after the commencement of the Works, the Contractor shall submit to the Engineer for his verification and endorsement, records of levels of the existing site condition. Similarly, the Contractor shall submit the as-constructed levels of the site to the Engineer upon completion of the Works. Such records shall be certified and endorsed by a Registered Surveyor engaged by the Contractor at his own cost.

4.3 SITE MEETINGS

4.3.1 The Contractor shall provide all facilities at the site for the purpose of conducting joint site meetings between the Contractor and the Engineer (or his representatives), as well as ensure notice of meetings and participation by all relevant department agencies – BWSSB, BESCOM, Traffic POLICE - to monitor the progress of the Works.

4.3.2 Site progress meetings shall be convened at a minimum of once a month as well as when arranged by the Engineer. A full progress review will be conducted by the Contractor at these meetings and minutes recorded and sent to all Agencies. All sub-contracotor representatives shall also be present at these project review meetings

4.3.3 The Contractor's key representatives (Project Manager, Construction Managers, Safety and Health Officer, Environmental Control Officer and site engineers, etc.) are required to attend daily pre-work meeting punctually prior to commencement of site activities and submit daily and weekly works programme to the Engineer (or his representatives).

4.3.4 The Contractor will be required to attend meeting as and when notified and he shall make available a responsible person with authority to accept and make decisions and to act on his behalf. All site meetings shall be properly minuted and recorded by the Contractor and a copy of the minutes for each meeting shall be submitted to the Engineer for record purpose.

4.4 ACCESS FACILITIES FOR CHECKING WORKS

4.4.1 The Contractor shall provide at all times during the execution of the Works and the Defects Liability Period proper means of access with ladders, gangways, etc., and necessary attendance to move and adapt the same as directed, for the inspection or measurement of the Works by the Engineer or his representatives.

4.4.2 The Contractor shall provide all assistance, supply and maintain necessary facilities such as digital camera with adequate flash, close-up and zoom lenses, torch, measuring staff, etc. to enable the Engineer or his representatives to check and record the progress of Works.

4.5 OBSTRUCTION AT SITE

4.5.1 The Contractor must clear all obstacles which may cause obstruction to the Works. In the case of a parked vehicle, he shall, at the direction of the Engineer's representatives, serve notice to inform the driver to move it from site.

4.5.2 All construction plant and equipment shall not be parked on main roads and shall be moved from site as soon as work completes. In cases where the construction plant and equipment are left on site for the purpose of works on the next day, then, subject to the Engineer's approval, the Contractor shall ensure that such items are properly parked and that there is no obstruction to traffic flow.

4.6 NOISE CONTROL

4.6.1 The Contractor shall maintain noise levels for construction premises as stipulated under the Environmental Pollution Control (Control of Noise at Construction Site Regulations) (Amended) Regulations latest and subsidiary legislation and any amendments and/or re-enactment thereto.

4.6.2 All vehicles and mechanical construction plants used for the purpose of the Works shall be fitted with effective exhaust silencers and shall be maintained in good and efficient working order.

4.6.3 All compressors shall be sound reduced models fitted with properly lined and sealed acoustic covers which shall be kept closed whenever the machines are in use, and all ancillary pneumatic percussive tools shall be fitted with mufflers or silencers of the type recommended by the manufacturer.

4.6.4 All construction plants shall, where appropriate, be muffled and the Engineer shall have the authority to instruct the Contractor to shut down any which is not adequately muffled and to remove it from the Site.

4.6.5 All machines in intermittent use shall be shut down or throttled down to a minimum in the intervening periods between works. Noise emitting equipment running continuously shall be housed in a suitable acoustic enclosure.

4.6.6 Constructional plant shall be maintained in good and workmanlike condition so that extraneous noises from mechanical vibration, creaking and squeaking are reduced to an acceptable minimum.

4.6.7 Percussive methods will not be permitted for breaking concrete. Equipment which breaks concrete or used for bending or such other equipment as is approved by the Engineer shall be used.

4.6.8 All pile driving, demolition works etc shall be carried out by a recognised noise reducing system. Rotary drills and busters actuated by hydraulic or electrical power shall, where practicable, be used for excavating hard material. Noisy constructional plant shall be sited as far away as possible from occupied buildings. The use of barriers (noise barriers, site huts, acoustic sheds, screens or partitions) to absorb and or deflect noise away from occupied buildings shall be employed wherever possible.

4.6.9 Care shall be taken when loading or unloading vehicles, dismantling scaffolding or moving materials to reduce impact noise. Access to the working areas shall be such as to ensure minimum disturbance to persons in occupied buildings. The Contractor shall not execute any of the works or carry out maintenance of construction plants in such a manner as to cause nuisance unless the work is absolutely necessary to save life or property or for the safety of the works in which case the Contractor shall immediately advise the Engineer.

4.6.10 The Contractor shall provide all that is necessary, including competent and qualified personnel and suitable equipment for all the measurements and recordings of the noise levels as and when requested by the Engineer during the Contract duration and submit a detailed report including analysis within two days after the day of measurements to the Engineer.

4.6.11 The Contractor shall provide and use construction plant and equipment, which have been specifically designed or modified to reduce the noise of normal operation.

4.6.12 All night work after 6pm shall be subject to the approval of the Engineer.

4.7 PROJECT MANAGEMENT CONSULTANTS- PMC

4.7.1 The Employer will engage an Project Management Consultants (PMC) as required under the _____ including any subsequent amendments and subsidiary legislation.

4.7.2 The PMC will supervise, review, evaluate and assess the Contractor's proposal for Permanent Works, Temporary Works, risk analysis report, instrumentation monitoring strategy and other submissions from the Contractor in relation to this Contract.

4.7.3 The Contractor shall provide necessary information and co-operation to the appointed (PMC) so as to enable him to discharge his statutory duties under the _____satisfactorily.

5. PROGRAMMING & PLANNING

BASELINE PROGRAMME

5.1.1 Within 15 days after the award of the Contract, the Contractor shall submit six (6) hardcopies and one (1) softcopy of a Baseline Programme to the Engineer for his acceptance. The Contractor's project manager shall make a presentation of his proposed programme to the Engineer to demonstrate his understanding of the contract requirements, planning, control, monitoring of works programme and resources of the Works. Upon acceptance of the Baseline Programme by the Engineer, the Contractor shall adhere to it strictly. The Contractor shall ensure that preparation, updating and revision of programme of works are carried out by experienced and qualified personnel.

5.1.2 The Baseline Programme shall be developed by the computerised Critical Path Method (CPM) using the Precedence Diagramming Method (PDM). The programming software shall be Primavera Project Planner or Microsoft Project or Open Plan, subject to the Engineer's approval.

5.1.3 Programme Details

The level of programme development, information and detail shall be sufficient to accurately define the Contractor's intentions and sequence of works. The programme shall show every significant activity required for the completion of the Contract that include but not limited to the following:

a. key dates, milestones, interface and handover dates, phased completion and completion of Whole of the Works;

b. Contractor's design (where applicable) including dates for submission to and acceptance by the Engineer;

c. submission and acceptance of road diversion plan, utilities diversion plan, Temporary Works and other works requiring approvals from authorities;

d. procurement of major equipment and material, in particular long lead items and the delivery to site;

e. all on-site works, including preliminary and Temporary Works by the Contractor, his sub-contractors and suppliers;

f. any off-site work such as the production and/or fabrication of any components or materials;

g. the different stages of traffic diversion and specific requirements with regard to traffic aspects as given in this Specification;

h. interface with Utility Agencies and work done by Utility Agencies or the Contractor for diversion;

i. interface with other contracts/contractors; and

j. any outside influence which will or may affect the progress of Works.

PROGRESS REPORT

5.2.1 Monthly Contractor's Report

Not later than the fifth day of each month, the Contractor shall prepare and deliver to the Engineer four (4) copies of the Contractor's monthly report with progress photographs (hereafter referred to as the "Contractor's Report") on the execution of the Works in the preceding month. One softcopy of the updated Baseline Programme shall also be submitted.

5.2.2 The Report shall be typed, printed and bound. It shall be supported by graphics and photographs. Unless the Engineer directs otherwise, the Contractor's Report shall comprise:

a. Introduction;

b. Monthly Progress Report;

c. Performance Report;

d. Status Report; and

e. Narrative Report.

5.2.3 Monthly/Weekly/Daily Progress

a. The Contractor shall keep a record of monthly progress of Works on site in the form of colour photographs with appropriate annotations and dates stated;

b. The Contractor shall deliver daily to the Engineer's representative a report as to the number of workmen employed on the works in each trade, etc. and records of delivery notes of all goods and materials delivered to the site;

c. Not later than 8.30 a.m. on each Saturday, the Contractor shall deliver to the Engineer a programme of the works he intends to execute in the following week. The programme shall of a format as agreed with the Engineer and shall clearly show the nature of those works, their locations any significant manpower, material and plant resource required therefore. The programme shall identify the Contractor's personnel who will be responsible for the supervision of the various activities; and

d. Not later than 8.30 a.m. on each working day, the Contractor shall deliver to the Engineer a programme of the works he intends to execute on that day. The programme shall be of a format as agreed with the Engineer and its requirements shall be as those for the weekly programme of works.

6.0 DESIGN REQUIREMENT

6.1 SAMPLES OF MATERIALS AND LIGHT FITTING

6.1.1 The Employer will provide additional detailed drawings as needed and developed during the course of the Project implementation, to guide the works details. The Contractor shall supply suggested details and construction drawings and technical literatures (specifications, brochures, material data), proposed material samples of items as required in the working drawings to demonstrate full compliance of the Employer's requirements and specifications, or as required to supplement the working drawings.

6.1.2 All construction drawings, technical literatures and proposed material samples shall be submitted for the Employer's approval prior to commencement of the Works and before any orders or bulk delivery of the said materials to the site is made. All samples which are approved will indicate the standard to be maintained in the execution of the Works and shall be Engineer marked and retained by the Engineer until the completion of the Works. In the case of rejection, further samples shall be submitted until they are approved. The Engineer may reject any material or workmanship which in his opinion, is not up to the approved standard. All samples submitted shall be deemed included in the Contract Sum.

6.1.3 Where reference is made to trade names or manufacturer's catalogue numbers, the Contractor may use any article or material similar and equal to those described only when specifically approved by the Engineer. No claim due to neglect in this respect shall be entertained.

6.2 TRAFFIC SIGNS, ROAD MARKINGS& ROAD FURNITURE

6.2.1 The Contractor shall provide all signage, road furniture (including supports and foundations) and road markings in accordance with the details and locations shown on the Employer's Drawings and as specified in the Materials and Workmanship Specification. Thermoplastic materials as per section MoRTH & IRC shall be used for all road markings.

6.2.2 The Contractor shall provide additional signage if deem necessary in his design or as instructed by the Engineer.

6.2.3 The Engineer's acceptance shall be obtained before any installation on site.

6.3 INSTRUMENTATION AND MONITORING

6.3.1 The Contractor shall carry out instrumentation and monitoring works. The Contractor shall comply with the minimum instrumentation given in the Design Criteria. Upon award of the Contract, the Contractor shall, in addition to the above, propose additional instrumentations to suit his construction method / temporary works scheme, and to ensure the safety and control of the Works subject to the approval of the SO.

6.3.2 The Contractor shall carry out installation of instruments and monitoring of the Works in a timely and safe manner.

7. SAFETY &ENVIRONMENTAL CONSIDERATAION

7.1.1 The Contractor shall throughout the progress of the works have full regard for the safety, health and welfare of all persons entitled to be upon the site and shall keep the site and works in an orderly state, appropriate to the avoidance of danger to such persons and shall maintain at his own cost all ventilation, lights, security personnel, fences, warning signs, watching, etc. When and where necessary or required by the engineer or by any statutory or other agency for the protection of the works or for the safety and convenience of the public or other.

7.1.2 The Contractor is advised to take note under the conditions of contract which stipulates the demerit points and administrative charges for safety and housekeeping infringements.

7.2 OCCUPATIONAL SAFETY & HEALTH (OSH) COMPETENCE & RESOURCE ALLOCATION ASSESSMENT

7.2.1 The Employer aims to set a standard of Occupational Safety and Health environment consistent with the best international practices for the management of its project.

8. TRAFFIC CONTROL AND ROAD SAFETY AT WORK ZONE

8.1 TRAFFIC CONTROL AND ROAD SAFETY

8.1.1 The Contractor shall comply strictly with the specifications given in the code of practice for traffic control at work zone which sets out the requirements, standards and procedures and provides guidance to implement traffic control plan necessary for carrying out work activities on the road so as to protect the public, equipment and workmen.

8.1.2 The Contractor shall submit detailed construction sequence and detailed traffic diversion schemes including scaled cross-sectional drawings and layout plans to the Employer for Tender evaluation. All construction sequences proposed by the Contractor shall have primary considerations for the safety of road users. Protective measures shall be presented to the Employer for evaluation and approval before award of Tender.

8.1.3 The Contractor shall note the traffic conditions at the Site and his proposed traffic diversion schemes shall be based on his investigation and appreciation of the Site for the completion of the whole of the Works.

8.1.4 The Contractor shall note that the construction methods and schedule of his Works proposed shall not cause any disruption to traffic flow. All accesses to premises affected shall be maintained at all times. Unless authorised in writing by the Engineer, the Contractor shall not be allowed to close off any traffic lane along any existing roads. He shall not be allowed to place, or cause obstruction near or on the carriageway in a manner which would cause a reduction in the traffic capacity of the road.

8.1.5 Closure of any traffic lane or any carriageway required shall be implemented in accordance with the approved traffic diversion scheme for all affected traffic movements.

8.1.6 All temporary traffic diversion schemes proposed for the Works shall be provided with a one-to-one replacement of all affected traffic lanes, footpath, pedestrian crossing, bus-stop and other road related facilities. Alternative pedestrian crossing facilities shall be provided prior to the dismantling of existing facilities.

8.1.7 The Contractor shall adhere to the minimum provisions of work zone safety as per IRC SP55. The Contractor's qualified engineer shall submit all detailed temporary traffic diversion schemes for the Works to the Engineer and relevant authorities including the Traffic Police, and etc. for approval. These proposed traffic diversion schemes shall be submitted in properly scaled engineering drawings and shall be supported with traffic analysis report. Such drawings shall include traffic layout plans showing all traffic signs, lane-markings, advance warning and directional signs etc., longitudinal section drawings and all other drawings necessary for the implementation of the schemes. The Contractor shall comply with the requirements of all relevant authorities in his implementation of the temporary traffic diversion scheme.

8.1.8 The temporary diversion road pavement shall be Asphalted or equivalent.

8.1.9 The Contractor shall also liase, co-ordinate with and assist the Employer in scheming and designing the provision of adequate street lighting along the diversion route. Foundations for lamp-posts and all ancillary works shall be provided by the Contractor.

8.1.10 For traffic diversion schemes which are to be implemented for a period of more than 3 months, all lane-markings shall be done in thermoplastic material. Lane-markings for each stage of the traffic diversion shall be maintained and, if necessary, replaced and repainted in good condition at all times to the satisfaction of the Engineer. All existing lane markings affected by the temporary diversion of traffic are to be properly grinded off. Diverted lane/arrow markings must be properly painted and must not be confused with the existing markings.

8.1.11 The Contractor shall note that all vehicular impact guardrails or kerbs removed during the construction stage shall be replaced with water filled safety barriers complete with safety reflective discs.

9. UTILITY SERVICES

9.1 EXISTING SERVICES

9.1.1 Prior to commencement of any part of the works under the contract, the Contractor shall locate (by cutting trial trenches, using cable detector, etc.), the exact positions of all existing sewer mains, gas mains, water mains, electrical cables, telecommunication cables and other utility services. The Contractor shall take all precautionary measures to prevent damage to the services and minimize all inconvenience to residents, during the cutting of trial trenches.

9.1.2 Where utility services which are in the way of the works are not diverted or not to be diverted, they must be supported and protected during the construction of the works. The Contractor shall submit to the engineer and the relevant utility services authorities, calculations and detailed drawings, endorsed by an independent professional engineer, for the necessary support and protection of these services. Any requirement that may be imposed by the utility services authorities in this connection shall be met fully and without compromise. Approval of the contractor's proposals must be obtained from the respective utility services authorities prior to commencement of works affecting these utility services.

9.1.3 The Contractor shall note that the employer will not be responsible for any damage of

the existing services caused by the construction works, etc. The Contractor will be liable for any damage to the existing services and carry out the repair works to the satisfaction of the engineer and the appropriate utility services authorities at his own expense.

9.1.4 All relevant utility services authorities shall be kept informed of any changes affecting their services.

10. DRAINS

10.1 DIVERSION AND MAINTENANCE OF EXIS TING DRAIN

Upon award of the contract and prior to the commencement of the works, the contractor shall submit to the engineer his proposal for the diversion and maintenance of existing drains for the whole period of construction to the engineer and respective authority for approval. The contractor shall be responsible for the maintenance of the free flow of the drains at all times. At no time shall the contractor obstruct or reduce the free flow area of the existing canal / drain without the prior approval of the engineer and respective authority.

If, in the opinion of the engineer, the contractor has not carried out or is unable to carry out such maintenance of temporary drain diversion to his satisfaction, the engineer reserves the right to employ others to carry out such works and deduct the cost of all such works from any money due to or to become due to the contractor.

The contractor shall remove all temporary works as soon as these are no longer required and reinstate the site to its original condition to the satisfaction of the engineer and respective authority.

The contractor shall take all necessary precautions to prevent any damage to the existing culverts and drains, if these are not proposed for re construction.

Existing drains/culverts/sumps etc. Made redundant when the new drains / culverts / sumps are completed shall be completely removed and filled with suitable materials to the satisfactory of the Engineer.

11. MAINTENANCE

11.1 MAINTENANCE DURING CONSTRUCTION: During construction, the contractor shall maintain, keep tidy and make good all carriageways/pavement structures, kerbs, footpaths, lane markings and turfing within the contract limit to a standard equivalent to existing condition and to the satisfaction of the engineer. The contractor shall ensure that free drainage of road carriageways is maintained at all times. Adequate side-outlets including scuppers, drop -inlet chambers, etc., shall be provided and maintained to facilitate the outflow of the carriageway water. Existing scuppers, road-side drains and other carriage-drainage facilities shall be kept in unobstructed and serviceable condition in the interim till the works are effectively drained by the new carriage-drainage facilities such as drop-inlet chambers, etc. To be constructed under this contract. Additional temporary drop inlet chambers, scuppers to prevent any ponding of water on any part of the carriageway shall be installed where necessary. Construction materials and debris shall have to be suitably placed away from the roadside drains, scuppers and other road-drainage facilities to avoid obstruction to these drainage channels. The contractor shall ensure that the existing structures not affected by the works are properly protected to the satisfaction of the engineer. He shall provide a system of monitoring the stability and structural integrity of the existing structures and ensure that these are fully integrated in his construction methods for the works.

11.2 MAINTENANCE DURING & AFTE R DEFECTS LIABILI TY PERIOD

The Contractor shall regularly maintain all Works in a tidy and satisfactory condition and shall make good any defect which may appear during the Defects Liability Period (DLP). For painted items of structures and roadside furniture, the Contractor shall provide everything necessary and repaint

all such items with 2 coats of approved paints at the end of the Defects Liability Period (DLP). All defects such as rust, chipped or dented surfaces, etc. shall be satisfactorily attended to prior to repainting. In this respect, the Contractor shall arrange a joint site meeting with the Engineer before any remedial works is carried out, and he shall comply with all requirements pertaining to the Engineer. Repainting of road lines, lanes and arrow markings shall not be required during or after the DLP.

The maintenance of trees, plants and grass shall include watering, weeding, fertilising and cutting twice per month as specified and maintaining its growth in a tidy and satisfactory state.

The Contractor shall notify the Engineer prior to commencement and on completion of each trimming of trees, shrubs, turfing etc. in order that a joint site inspection can be made.

Post DLP, Maintenance clause is applicable for 36months as per BBMP's circular No.A/P.S.R/G-
5317/12-13 issued dated 24/09/2012. During this period, the Contractor shall maintain drains, landscaping and other works to the satisfaction of the Engineer and the employer.

11.3 INSPECTION OF WORKS DURING DEFECTS LIABILITY PERIOD

During the DLP of 24 months post construction, the Contractor shall carry out monthly inspection of the Works for any defects. He is required to immediately rectify all defects determined during the inspection or when informed by the Engineer and complete the rectification works within the timeframe stipulated by the Engineer.

The Contractor shall also attend monthly meetings conducted by the Engineer to monitor the status of rectification works and to clear any outstanding matters regarding the Contract. All meetings shall be properly minuted and recorded.

Three (3) months before the end of the DLP, the Contractor shall arrange and conduct a joint site inspection with his pertinent subcontractors and suppliers to determine any defective works. Rectification work for all the defects identified shall be completed within a month.

At the end of the DLP, the Contractor shall take all necessary action to ensure that all the Works are free from any defects and in a good and satisfactory condition for handing over to the relevant authorities for maintenance. The Engineer and the relevant authorities shall ascertain the acceptability of the Works to move into the "Maintenance". Phase of the contract

11.4 PROVISION OF WASHBAY

The Contractor shall provide properly designated area as washbay at all entrances/exits to the Site and ensure that all vehicles, plant or equipment leaving the Site are properly cleaned before travelling on public roads. The location of the washbays shall be subject to the approval of the Engineer.

12. CONSTRUCTION

12.1 METHOD STATEMENTS

12.1.1 The contractor shall submit comprehensive method statements for all temporary works before the start of any works to the engineer's approval. Submission of this method statement shall be sufficiently (minimum 3 weeks) in advance of the construction of the works to allow adequate time for review, resubmission as necessary and future review. The statement shall clearly identify in details, the contractor's proposed methods (including machinery/equipment material and other resource needed), sequence of working with necessary plans, drawings and calculations.

12.1.2 Designs and drawings for Temporary Works shall be submitted for the acceptance of the

Engineer and relevant authorities.

12.1.3 All Temporary Works shall be removed after use and approval must be sought from the Engineer with justification if otherwise.

12.1.4 Bentonite slurry waste shall not be discharged into the public sewerage and drainage systems.

12.2 SITE CLEARANCE AND DEMOLITION WORKS

12.2.1 The Contractor shall clear site of shrubs, bushes and all other forms of vegetation with the prior permission of the Engineer including grubbing up roots, etc. The Contractor shall note that felling of trees without the written consent of the Engineer is strictly prohibited.

12.2.2 The Contractor shall demolish and remove with the prior permission of the Engineer all existing structures, obstructions and fixtures made redundant by the Works which are within the overall road reserve or Contract Limit and/or related with the proposed Works.

12.2.3 The Contractor shall break up and remove (or seal up if directed by the Engineer) existing redundant pavement, scupper drains, pipes, and backfill with approved materials to the required level unless otherwise indicated.

12.2.4 The Contractor shall break up existing redundant road kerbs and foundations, cart away debris and backfill with approved materials to the required level unless otherwise indicated.

12.2.5 The Contractor shall remove debris and surplus earth from Site to the Engineer suggested location.

12.2.6 The Contractor shall raise all other items e.g. boundary walls, fixtures, fences, etc. affected by road raising but not specifically mentioned herein including making good all works affected on completion.

12.2.7 The Contractor shall reinstate all damaged roads, drains, kerbs, fencing, boundary walls, fixtures and all other works disturbed to the satisfaction of the Engineer.

12.2.8 The Contractor shall liaise with Utility Services Departments, telecommunications operators such as BSNL, Airtel, etc. for the location and relocation of all pipes, cables, main ducts, posts, manholes, boxes along or beneath the road reserve or in any part of the work in order to ensure that all service requirements are met before commencement of the work.

12.3 RECONSTRUCTION, RELOCATION AND REINSTATEMENT WORKS

12.3.1 The Contractor shall visit the Site to ascertain himself, prior to tender submission, all work items affected by the Works which require raising, demolition, reconstruction, extension or relocation including fence, boundary wall, entrance, gate, driveway, compound drains, posts, lights, sign boards, fixtures, services such as cabling, sanitary, plumbing, sewers, water pipes, landscaping features such as turfing, plants, trees, flower troughs belonging to statutory or private properties, etc.

12.3.2 The Contractor shall liaise closely with the owners of the private houses and shop houses and owners of other private properties on any reconstruction, reinstatement and relocation works. The Contractor shall plan his construction works so as to cause minimum obstruction and inconvenience to the owners and the public. The Contractor shall take note of the existing facilities such as tiling, fencing, automatic gate, boundary walls, fixtures, etc. of these houses. At the end of any construction work, these facilities shall be reinstated to match existing to the satisfaction of the private property owners. The Contractor shall liaise with these owners before carrying out his work.

12.3.3 The Contractor shall seek approval from the Engineer before any work can be carried out.

12.3.4 The Contractor shall be fully responsible for the suitability, adequacy, integrity, durability and practicality of the design as set out in the Drawings, Specifications, manuals, calculations and other information submitted for the acceptance of the Engineer, including any subsequent amendments of such design.

12.3.5 The Contractor shall not proceed with the execution of any reinstatement works until he has submitted to the Engineer, work method statements, design calculations, specifications, and other information as shall be necessary to demonstrate the suitability, adequacy, integrity, durability and practicality of such design and the Engineer has issued his acceptance in writing of such design. Acceptance by the Engineer of such submission shall not relieve or in any way limit the responsibility of the Contractor. All such submissions shall be duly endorsed by the Contractor's PE.

12.3.6 Such submission shall be made well in advance to enable the Engineer sufficient time to check, study and comment on the Contractor's proposal without affecting the progress of the Works.

12.3.7 The Contractor may in the course of his works be required to execute works beyond the contract boundary encroaching into other's properties. The Contractor shall exercise strict control over his workmen not to use or trespass into, any of the properties without prior written permission of the property owners. Any fence or fence walls dismantled should be replaced immediately or other equivalent to ensure the security of affected properties.

12.3.8 In cases where the Contractor need to enter private land to execute works where prior permission have not been obtained, the Contractor must obtain the necessary permission from the owners before entering the lands. The Contractor shall complete the works in the private land within the shortest period and shall not store any material, equipment and plant within the private lands.

12.3.9 The Contractor shall take precautions to avoid damaging the existing signboards during resiting. Should the signboards be damaged during the course of the works, the Contractor shall replace the signboard with a new one to match the existing.

12.3.10 In executing any of the relocation works, the Contractor shall make good any deficiency in length, height, amount of materials (e.g. fence, fence walls, boundary walls, etc.) with new materials. The Contractor shall also replace all damaged or corroded works or works that cannot be relocated satisfactorily (e.g. foundations, walls, cables etc.) to the Engineer's satisfaction.

12.3.11 The Contractor is required to reinstate all landscaping areas including turfing, any plants or trees affected by the works. The costs of the reinstatement works shall be deemed to be included in the Contract Sum.

12.4 SITE CONTROL AND TESTING INSTRUMENTS

12.4.1 The Contractor shall provide all the necessary labour, plant, tools, instruments and materials for carrying out all tests at the Site including the provision of all necessary transport for the transportation of test materials, samples and the Engineer, etc. to and from an approved laboratory as and when directed by the Engineer or his appointed site representative.

12.4.2 The Contractor shall provide penetrometer on Site. The Contractor shall maintain this instrument in good condition at all times throughout the Contract Period. The instrument must be approved by the Engineer before it is used.

12.4.3 The following control tests on road sub-grade and sub-base shall be carried out by the Contractor in the presence of the Engineer:

a. Minimum three numbers in-situ dry density tests with a Volumenometer at every 50m intervals per carriageway;

b. Minimum three number in-situ test with a cone penetrometer at 25m intervals per carriageway; and

c. Any other tests that the Engineer may carry out from time to time during the Contract period.

12.4.4 If settlement plates and/or markers are required, the Contractor shall maintain, protect and monitor the settlement plates and/or markers until the expiry of the Defects Liability Period.

12.4.5 The Contractor shall provide at all times, electronic detectors of an approved brand to be used on Site to help in locating utilities services. It is to be noted that the deployment of the electronic device will not absolve the Contractor his responsibility in locating the exact locations of all existing services and all readings of electronic device are to be confined by cutting trial trenches.

12.4.6 Field Laboratory

The Contractor shall provide and maintain adequately equipped Field Laboratory as required for Site Control on the Quality of Material and the Works. It shall have a minimum of 40 Sqm Area. The Field Laboratory shall be located as directed by the Employer or his approved Representative. It shall be provided with Amenities like Water Supply, Electric Supply, etc. The Laboratory will have all Services, Furniture, Equipments, etc. Minimum of the following Items shall be provided in the Field Laboratory. Any Additional Items as required for Testing
/ Evaluation in line with the Standard Procedures and Codal Provisions shall also be provided.

12.4.6.1 Equipments required – General

i. Oven – Electricity Operated, Thermostatically Controlled, Range upto 200^{0}C, Sensitivity 1^{0}C — 1 No.

ii. Plat form balance 300 kg capacity — 1 No.

iii. Balance 20 kg Capacity – Self Indicating Type — 1 No.

iv. Electronic Balance 5kg Capacity – accuracy 0.5 gm — 1 No.

v. Water Bath – Electrically Operated and Thermostatically Controlled with Adjustable Shelves, Sensitivity 10^{0}C — 1 No.

vi. Thermometers — 4 Nos.
each a. Mercury – in – Glass Thermometer ranges 0 to 250^{0}C
b. Mercury – in – Steel Thermometer with 30 cm Stem, ranges up to 300^{0}C

vii. Glass Wares, Spatulas, Wire Gauzes, Steel Scales, Measuring Tape, Casseroles, Pans, Enameled Trays of Assorted Sizes, Pestle Mortar Porcelain Dishes, Gunny Bags, Plastic Bags, Chemicals, Digging Tools
like Pickaxes, Shovels, etc. — As Required

viii. Set of IS Sieves with Lid and Pans 450mm Diameter with Sizes of 63 mm, 53mm, 37.5mm 26.5mm, 13.2mm, 9.5mm 6.7mm and 4.75mm 200 mm Diameter of Sizes 2.36 mm, 2mm, 1.18 mm, 600 micron,

425 micron, 300 micron, 150 micron and 75 micron 1

Set ix. Water Testing Kit for pH, SO_3 and Cl

1 Set

x. First Aid Box 1
Set

12.4.6.2 Equipments required – Soil & Aggregate

i. Atterberg's Limits (Liquid and Plastic Limits) Determination
Apparatus 1
Set

ii. Compaction Test Equipment both 2.5 kg and
4.5 kg Rammers (Light and Heavy Compact Efforts) 1
Set

iii. Dry Bulk Density Test Apparatus (Sand Pouring Cylinder,
Tray, Can, etc.)complete 1

Set iv. Speedy Moisture Meter complete with Chemicals

1 Set

v. Pothole Auger with Extensions 1

Set vi. Core Cutter Apparatus complete with Dolly, Rammer, etc.

1 Set vii. Flakiness and Elongation Test Gauges

1 Set viii. Standard Measures of 30, 15 and 3 litres Capacity along with Standard Tamping Rod
Set 1

12.4.6.3 Equipments required – Cement & Cement Concrete

i. Slump Test Apparatus
Set ii. Compression and Flexural Strength Testing Machine of 200T 1
Capacity with Additional Diameter for Flexural Testing
Set 1

iii. Cube Moulds for Concrete Tests 40

Nos. iv. Surface Moisture and Density Meter for Soil,
Aggregate and Concrete
No. 1

12.5 MONITORING WORK ON ADJOINING PROPERTIES/STRUCTURES AND SURROUNDING GROUND

RI - Dasarahalli Division

12.5.1 The Contractor shall provide and implement an programme to monitor the effect of excavation, demolition and compaction works or existing structures, including supply, installation, monitoring, maintenance of all submissions of all results by a professional engineering consultant, etc. all in accordance with the Materials a Workmanship Specification.

12.5.2 The Contractor shall submit his detailed instrumentation programme and locations for the adjoining properties/structures, proposed structures and surrounding ground to the Engineer and the relevant authorities for approval prior to commencement of works.

12.5.3 The duration of the instrumentation period shall be the Contract period including any extension of time and the whole of Defects Liability Period.

12.5.4 Survey bench marks and datum readings of all instruments must be taken before commencement of any works. No excavation works, demolition works and compaction works shall commence until the instrumentation programme has been approved and all necessary instrumentation are properly installed, calibrated and functioning.

12.5.5 The monitoring system must include its own independent power supply and no reliance should be placed on obtaining power supplies from the surrounding buildings or other public facilities and utilities.

12.5.6 The Contractor shall be required to carry out additional monitoring in critical situations where the Engineer deems that the safety of the surrounding structures, adjoining properties, proposed structures and public is at risk. Under such circumstances, the Contractor shall out the monitoring work at a frequency of twice a day or as requested by Engineer and to mobilise additional suitable equipment and trained personnel within 24 hours of receiving instruction from the Engineer. No claims for extra cost or time incurred by the Contractor as a result of such additional monitoring work shall be allowed.

12.5.7 For the avoidance of doubt, construction period shall mean period from the commencement date stated in the Letter of Acceptance up to the Date of Substantial Completion.

12.5.8 The minimum frequency of readings to be taken for the instrumentation programme during Defects Liability Period shall be once a month, subjected to the approval from the Engineer.

12.5.9 The Contractor shall provide, install and protect all instrumentation equipment installed and in use during the Contract period including removal upon completion. Any instrumentation equipment found not in working condition shall be replaced by the Contractor immediately upon detection and all replacement cost shall be deemed included in the Contract Sum.

12.5.10 The appointment of the geotechnical instrumentation specialist by the Contractor shall be subject to the Engineer's approval.

12.5.11 The Contractor shall submit four (4) sets of weekly interpretive monitoring report analysed and interpreted by the Professional Engineer (PE) for Temporary Works. The PE for Temporary Works shall also prepare a report duly endorsed by him and make recommendations, if any, regarding prevention of damage to surrounding structures and services and the safety of the Works. The Contractor shall carry out the PE's recommendation immediately at his own cost.

12.6 TEMPORARY WORKS

12.6.1 The Contractor shall employ a Professional Engineer (PE) to design the Temporary Works. The PE responsible for the design of Temporary Works shall be an independent person/consultant, not under direct employment of the Contractor's firm. The PE must be registered with the City Corporation or Technical Body like, Indian Institute of Engineers,

etc. He shall be responsible for submission to the relevant authorities for approval of the Temporary Works for construction. The PE shall inspect all Temporary Works and ensure compliance with requirements in the design and as stipulated by the relevant authorities. He is also responsible for recommending and implementing any modification and rectification of the Temporary Works as necessary, subject to the Engineer's approval.

12.6.2 Six (6) copies of the design submissions shall be given well in advance of the date indicated on the construction programme for the commencement of the activity. The Contractor shall allow for sufficient lead time in obtaining the necessary approvals from relevant authorities and clearance by Qualified Person (Supervision) engaged by the Employer. The Contractor shall make all amendments or corrections which the Engineer may require and re-submit the amended or corrected submissions until the drawings and/or calculations are finally accepted and approved by the relevant authorities.

12.6.3 The Contractor shall submit his PE Certificate stating that the Temporary Works have been constructed according to the design for all stages of Works. The PE must comply with the conditions as in the Contract Document. The PE shall ensure adequacies in the structural elements at all stages prior to proceeding to the next stage of Works and to conduct regular inspections on all Temporary Works.

12.6.4 Works shall not commence without the prior acceptance of the Engineer. If in the opinion of the Engineer and/or Qualified Person (Supervision) engaged by the Employer, any such temporary support proposed by the Contractor is deemed to be insufficient, the Engineer may order the provision of additional supports entirely at the Contractor's own expense. Any such instructions and/ or acceptance of the Contractor's design proposal for the Temporary Works given by the Engineer and/or Qualified Person (Supervision) engaged by the Employer shall not relieve the Contractor of his responsibility for the proper design and safe execution of the Temporary Works and for the safety of all personnel.

12.6.5 The design of all Temporary Works shall comply with the requirements of the Design Criteria and Materials and Workmanship Specification for Civil & Structural Works. All Temporary Works shall be designed to the similar standards as the Permanent Works unless otherwise accepted by the Engineer in writing.

12.6.6 The Contractor shall note that all existing traffic movement at all existing roads shall be maintained during the period of construction. The Contractor shall note that no temporary / false work shall be erected on the roadway, including the centre median.

12.6.7 Monitoring of the movement of utility services shall be proposed for the acceptance of the Engineer and the relevant utility agencies.

12.6.8 Whilst the Engineer will attempt to respond to such submissions speedily, the Contractor shall in no case assume that it can be undertaken in less than twenty-one (21) working days.

12.6.9 The Contractor shall inspect the Temporary Works, supervise the loading of the Temporary Works and ensure the design criteria are not invalidated.

12.6.10 The Contractor shall ensure that the removal of the Temporary Works do not cause adverse effects on the completed structures, adjacent structures, roads and other properties and that full compliance with the dismantling proposals recommended by the PE and approved by the Engineer are met.

12.7 EARTHWORKS

12.7.1 The Contractor shall carry out earthworks to the required lines and levels, forming verge and embankments, including grading, levelling, trimming, ramming and consolidating all as specified and as shown on the Drawings.

12.7.2 The Contractor shall note that all levels stated in the Drawings are for information only. The Contractor is advised to verify the actual level on Site. He shall be deemed to have priced his tender based on the actual level on Site.

12.7.3 Fill shall be of approved earth material obtained from Contractor's own sources. The Contractor shall obtain Engineer's approval prior to using his earth filling materials for the Works.

12.7.4 The Contractor shall remove all surplus excavated materials from Site to the Contractor's own dump.

12.7.5 The Contractor shall be deemed to have taken into consideration difficulties due to the soil conditions affecting piling, concreting, etc. for the Works. The Contractor shall make his own arrangement such as providing temporary sheet piling, water pumps, temporary drains and temporary soil stabilising necessary to overcome the problem of water and vibration during the construction.

12.7.6 The Contractor shall note that certain parts of the existing areas within the Contract Limit (i.e. the low lying areas) would need to be backfilled up to the appropriate level before constructing the road works. Earth filling shall be with approved earth obtained from the Contractor's own source. Earth filling shall be placed and compacted in layers to the required levels. The Contractor shall seek the approval of the Engineer on the extent of area to be backfilled. He shall ensure that the backfill materials, method of backfilling and workmanship are to comply strictly with Materials and Workmanship Specification for Civil & Structural Works.

12.7.7 Where excavation works are to be executed under existing carriageways, for instance, construction of RCC Slab culvert, the Contractor shall design and erect steel decking fit for the purpose subject to Engineer's approval. The design of the steel decking shall be endorsed by a PE and the installation supervised and checked by the PE at the Contractor's own costs.

12.7.8 Where cutting of ground is to be executed next to existing structure, the Contractor shall submit method statement including stability check, protective measures and monitoring details to be duly endorsed by a PE prior to commencement of excavation. The Contractor shall monitor all readings taken and submit a detailed assessment report duly endorsed by his PE for Engineer's approval. All costs associated therewith shall be deemed to be included in the Contract Sum.

12.8 SLOPE CUTTING WORKS & REINSTATEMENT WORKS

12.8.1 The Contractor shall ensure proper safety measures are taken during the whole period of excavation works or related works.

12.8.2 The Contractor shall fully indemnify the Authority at all times against all liabilities of whatever nature and description which may be suffered by the Employer arising from the slope cutting work in State land.

12.8.3 The Contractor shall make good all works affected to the satisfaction of the respective developers or landowners after slope cutting work in State land.

12.8.4 The Contractor shall be responsible to reconstruct all boundary walls, fencings, fixtures, access roads, entrances/exits, footpaths, open drains and other facilities at the affected area after slope cutting work.

12.8.5 Reinstatement works shall be done in regular sections and in good workmanship to match the surrounding areas.

12.8.6 The Contractor shall liaise with the respective landowners or authorities for site inspection before commencement of work and after the completion of the reinstatement works.

12.8.7 The Defects Liability Period of 24 months shall commence upon the successful handing over of the above works to the respective owners.

12.8.8 The Contractor shall be responsible for the design and construction of all excavation systems. The Contractor shall engage a Professional Engineer who is experienced in Geotechnical Engineering to design and supervise and check on the excavation systems. It is the Contractor's responsibility and duty to conduct site investigation at his own expense to satisfy himself of the soil conditions of the site for the purpose of design and construction of the excavation systems. The Contractor shall engage a qualified engineer to provide standing supervision of all excavation works at Site.

12.8.9 The design of the excavation system shall take into consideration the use of suitable methods of installation of wall element and bracing system to minimise ground settlement, vibration of the surrounding structures and particularly heaving of the area. The methods and sequence of construction shall be clearly indicated.

12.8.10 The Contractor shall take every precaution during excavation to prevent base heave and piping. Any damages to completed works and surrounding structures caused by bases heave or piping shall be made good at the Contractor's expense and to the satisfaction of the Engineer.

12.8.11 Excavation shall be carried out in stages strictly in accordance to the proposed excavation method. Under no circumstances shall the Contractor be permitted to over excavate at any location of the excavation. Any over excavation shall be immediately backfilled with approved materials to the required level..

12.8.12 The Contractor shall immediately provide additional support or bracing to the wall if there is any sign of movement approaching the allowable limit and review the design. All such provisions shall be made at the Contractor's expense.

12.8.13 The Contractor shall note that all work programme and construction method are also subject to the approval of the other relevant authorities. He shall fully comply with all requirements, rules, regulations and Bye-Laws. The Contractor shall be deemed to have allowed for the time required for authorities' clearances in his programme and shall pay any dues as need for any license or other concessions granted.

12.8.14 The Contractor shall allow in his tender for any extra costs and expenses that may be incurred due to inconvenience, idling of plants, labour or machinery arising from site, difficulties or obstructions of any form or nature and/or arising from compliance with any Rules, Regulations, Bye-Laws and Requirements of the relevant authorities.

12.9 KERBS AND FOUNDATIONS

12.9.1 The Contractor shall construct precast concrete kerb as per designs and laid jointed with cement mortar (1:3) to correct line and levels and proper connection to existing, including mass concrete foundation, painting, all as specified and shown on the Drawings.

12.10 DRAIN WORKS

As per the structural drawing issued to the contractor.

12.10.1 The Contractor shall construct RCC Lined drain including forming cascade, excavating, to proper line and gradient.

12.10.2 The Contractor shall construct R.C. C.drains inclusive concrete benching, hardcore packing, to the required lines and gradients including proper connections to drains etc. and all ancillary works.

12.10.3 The Contractor shall construct cast in-situ concrete RCC Slab culvert inclusive weep holes complete with concrete base, quarry dust backfill, parapet etc. and proper connection to drains, sumps at inlet and outlet ends to the required lines and levels and all ancillary works.

12.10.4 The Contractor shall design and construct temporary support to uphold and maintain the sides of earthwork by whatever means considered necessary. He shall be fully responsible for the suitability, adequacy, integrity, durability and practicality of the temporary support. The

Contractor shall not proceed with the work until he has submitted the design of the temporary supports to the Engineer for approval. The design shall be duly endorsed and installation supervised and checked by the Contractor's PE.

12.11 PEDESTRIAN FACILITIES

As per the drawings issued to the contractor

12.11.1 The Contractor shall construct footpath as per the tender drawings.

12.12 TRAFFIC FACILITIES

12.12.1 The Contractor shall paint road markings, arrows, etc. with thermoplastic paint.

12.12.2 The Contractor shall supply and erect directional signs, traffic signs, plastic bollards, raised pavement markers etc. inclusive of support and mass concrete foundations and all ancillary works as shown on the Drawings. All traffic signs and directional signs shall be of retro- reflective sheeting or approved equivalent.

12.12.3 The Contractor shall paint road kerbs as shown on Drawings.

12.12.4 The Contractor shall re-site existing gantry sign, cantilever signs, information signs, directional signs and traffic signs affected, including cleaning the existing signs and erect at the new positions, inclusive of mass concrete foundation and all ancillary works as shown on the Drawings. The Contractor shall make or replace any damaged signs to the satisfaction of the Engineer.

12.12.5 The Contractor shall price for the removal/relocation of existing street lightings, sign boards, street furniture and/or other road facilities which belongs to the private owners that fall outside the road reserve subject to the approval of the respective land owner.

12.13 REQUIREMENTS FOR DESIGN MIXES

12.13.1 The Engineer reserves the right to instruct the Contractor to modify and improve the mix design from time to time during the progress of work as and when he considers necessary to meet the requirements for design mixes. This shall not entitle the Contractor to any extra payment.

12.14 CONSTITUENT MATERIALS OF CONCRETE

12.14.1 The Contractor shall allow in his Contract Sum the provision of materials for tests and delivery to approved Empanelled and accredited laboratories. Testing fees shall also be borne by the Contractor.

12.15 FORMWORK

12.15.1 Notwithstanding the acceptance by the Engineer, the strength and adequacy of the formwork shall remain the responsibility of the Contractor and/or his PE.

12.16 OTHER ITEMS

12.16.1 The Contractor shall paint all exposed metal parts with two coats of primer, one undercoat and two finishing coats of synthetic enamel paint unless otherwise stated.

12.16.2 The Contractor shall allow for all other items referred to in the Specifications and Drawings but not specifically covered under items mentioned above and items not specifically mentioned in the documents but otherwise necessary for the completion of the

Works.

For detailed specification KBS/KRBS/ MoRT&H can be referred.

13. AS BUILT DRAWINGS

13.1 The Contractor shall within three (3) months after the completion of the Works provide the following documentation:

a) As-constructed Site Plan / As-built Topographical Survey, inclusive of retained topographic features within the contract boundary (1:500 scale);

b) As-constructed Longitudinal Section Plan (1:1000 scale for horizontal alignment and 1:100 for vertical alignment);

c) Setting Out Plan (1:1000 scale);

d) As-constructed Traffic Plan (1:1000 scale);

e) As-constructed Civil and Structural Plans of all structures, these shall be submitted progressively upon completion of the structures;

f) As-constructed drains submission.

13.2 The As-constructed Drawings shall be prepared in accordance with the Employer's Drawing and CAD Standards (ACAD) to be issued to the Contractor upon award of the Contract.

13.3 The above plans shall be prepared in either Two-Dimensional or Three-Dimensional (3D) CAD format (DWG File). The As-constructed Site Plan and Setting Out Plan shall be endorsed by a Registered Surveyor and other plans endorsed by a PE.

13.4 All drawings shall be submitted to the Engineer within three (3) months after completion of Works in the following format:

a) Master Transparency;

b) Two (2) sets of paper prints in A1/A0 size and 2 sets of paper prints reduced to A3 size. All the A3 size drawings should be properly ring binded with plastic sheet cover;

c) One set of the softcopy in Compact Disc (CD)/ pendrive.